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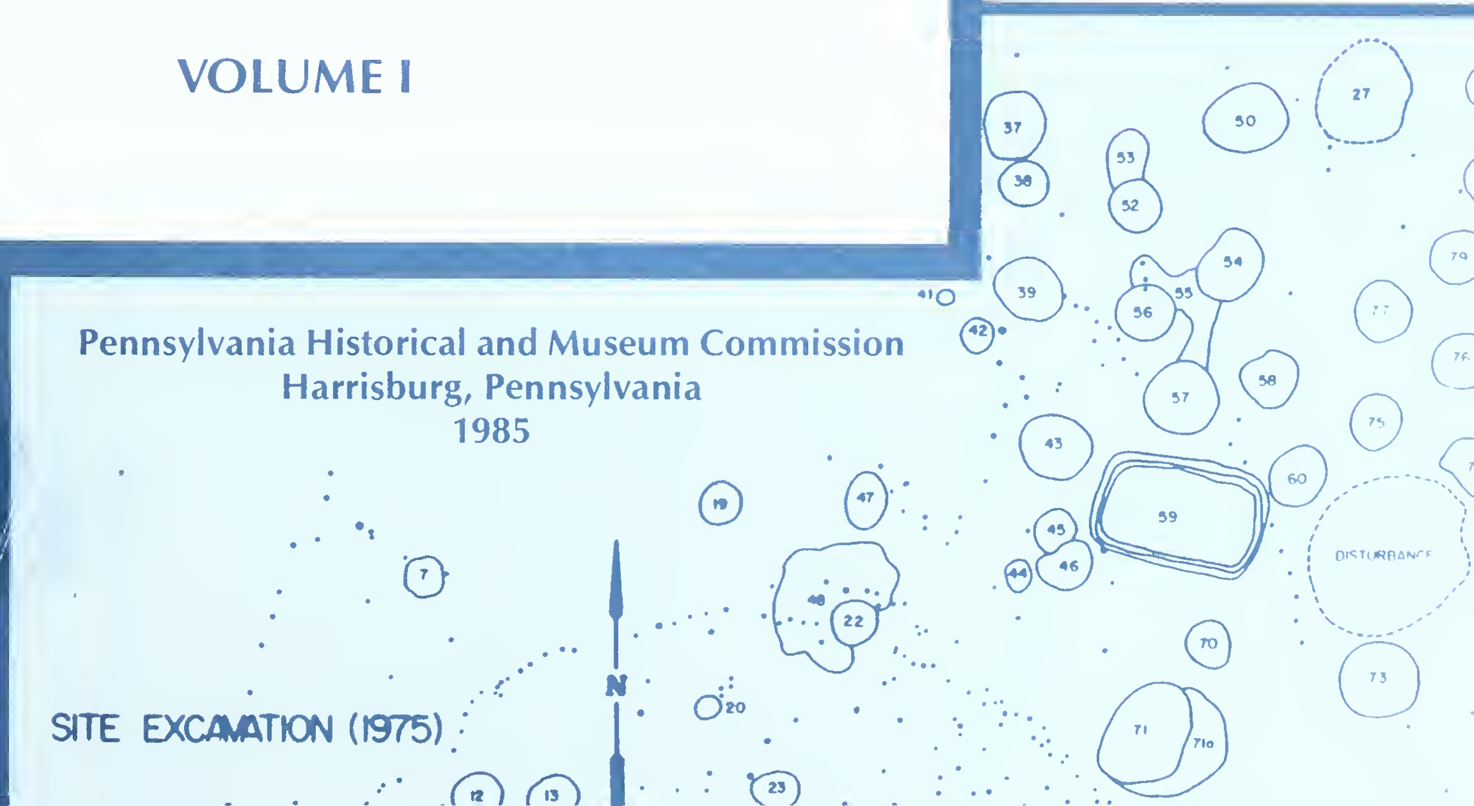
Historic Preservation Planning Series, Number 1

A Comprehensive STATE PLAN for the Conservation of ARCHAEOLOGICAL RESOURCES

VOLUME I



Pennsylvania Historical and Museum Commission
Harrisburg, Pennsylvania
1985

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Historic Preservation Planning Series – Number 1

A Comprehensive STATE PLAN for the Conservation of ARCHAEOLOGICAL RESOURCES

VOLUME I

Prepared by
Paul A. Raber

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Pennsylvania Historical and Museum Commission
Harrisburg, Pennsylvania
1985

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Acknowledgements

Development of a state plan for the management of archaeological resources in Pennsylvania began in 1980 with the drafting of a preliminary statement by the archaeological staff of the PHMC. Reaction to this initial effort by the archaeological community in Pennsylvania and discussion within the Bureau for Historic Preservation indicated that a more comprehensive effort was needed. It was obvious that staff limitations precluded the writing by the PHMC archaeological staff of a comprehensive document. In September 1981 the BHP contracted with the author to prepare a comprehensive plan for archaeological resource management. The initial nine-month contract was later extended to allow for editing and coordination of the group efforts represented in the study unit summaries of Volume II. The edited versions of Volumes I and II, incorporating comments and suggestions from professional and amateur archaeologists across the state, were completed by June 1983.

The cooperation of the PHMC (Bureau for Historic Preservation) staff was essential to the completion of the plan. Archaeologists and non-archaeologists alike provided support, criticism, and contributions during the writing and editing phases. Brenda Barrett, BHP Director, and Donna Williams, Division of Planning and Protection, coordinated much of the effort. Expert archaeological advice and assistance was given by Dr. Barry Kent, Kurt Carr, and Steve Warfel of the PHMC staff.

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GLOSSARY

A. Definition of Terms. Whenever used in this document, the following terms have the following meanings (unless the context requires otherwise):

1. agency - any Commonwealth or federal department, agency, board, commission or subdivision of the above, or a public benefit corporation, or public authority whose membership is partially or wholly appointed by the Governor.

2. archaeological field investigation - the study of human culture at any archaeological site by means of surveying, excavation, sampling, or removing archaeological specimens.

3. archaeological specimens - all artifacts, remains, objects, or any other evidence of historic, prehistoric, or anthropological value, whether found above or below the surface of the earth.

4. archaeological site - a locality containing and defined by the presence of the material remains of human culture.

5. Commission - the Pennsylvania Historical and Museum Commission (PHMC).

6. eligible property - any historic or archaeological place or property in the Commonwealth determined by the Commission to meet the criteria for inclusion on the Pennsylvania Register (see below).

7. historic preservation - the research, restoration, rehabilitation, and other activities furthering the protection, enhancement, continued existence, or enjoyment of historic resources.

8. historic resource, archaeological resource; cultural resource - any building, structure, object, district, place, site, or area significant in the history, architecture, archaeology, or culture of the Commonwealth, its communities, or the Nation.

9. National Register (of Historic Places) - that inventory of historic places established by the National Preservation Act of 1966.

10. private organization - any organization constituted to engage in historic preservation.

11. public officials - officers, agents, and employees of the federal government, the Commonwealth of Pennsylvania, or its counties, townships, municipalities, and other political subdivisions.

12. registered property - any historic or archaeological place or property in the Commonwealth nominated by the Commission for listing on the National Register or listed on the Pennsylvania Register.

13. undertaking - any physical activity performed, sponsored, licensed, or funded by an agency of the Commonwealth, including the alteration or demolition of property and the transfer, lease, or sale of property.

B. Abbreviations - see text for meanings.

ACHP - Advisory Council for Historic Preservation

AHPA - Archaeological and Historic Preservation Act
("Moss-Bennett" Act) (1974)

ARPA - Archaeological Resources Protection Act (1979)

BHP - Bureau for Historic Preservation (PHMC)

CFR - Code of Federal Regulations

CRM - Cultural Resource Management

DER - (Pennsylvania) Department of Environmental Resources

DOE - Determination of Eligibility

EIS - Environmental Impact Statement

FHWA - Federal Highway Administration

HCRS - Heritage Conservation and Recreation Service
(now absorbed into NPS).

IAS - Interagency Archaeological Service (NPS)

MOA - Memorandum of Agreement

NART - National Archaeological Research Topic

NEPA - National Environmental Protection Act (1969)

NHPA - National Historic Preservation Act (1966)

NPS - National Park Service

OSM - (Federal) Office of Surface Mining

PAC - Pennsylvania Archaeological Council

PASS - Pennsylvania Archaeological Site Survey

PennDOT - Pennsylvania Department of Transportation

PHMC - Pennsylvania Historical and Museum Commission

RP3 - Resource Planning and Protection Process

SHPO - State Historic Preservation Office(r)

SPA - Society for Pennsylvania Archaeology, Inc.

CHAPTER 1

Introduction: The Purpose of a State Plan

1.1 Legal Mandate

The current archaeological program of the Pennsylvania Historical and Museum Commission is the outcome of more than three quarters of a century of involvement by the Commonwealth in the conservation of its archaeological resources. This program, whose development is described in Chapter 2, was mandated by a series of laws and amendments summarized in Appendix A. These laws established a set of diverse tasks for the PHMC in the investigation, conservation, and use of Pennsylvania's archaeological resources. Research, public education, and conservation are all important and interdependent aspects of the PHMC's archaeological program and parts of its total responsibility to the public to protect and provide access to a common heritage.

1.2 The Purpose and Goals of a Cultural Resource Management Plan

The extent of the threat to cultural resources, including archaeological sites, is increasingly apparent. Economic and land development in various forms has altered and will substantially alter the landscape of Pennsylvania and in the process destroy thousands of sites. In some cases, simply recording the information visible at the surface, mapping, and collecting artifacts would be sufficient to preserve archaeological information, while other sites require more involved efforts to insure their preservation. "Preservation" and the protection of cultural resources from the negative effects of human activity and natural forces can only be accomplished by establishing goals for a preservation program: by deciding for what purpose cultural resources are being preserved. It will remain impossible or difficult to decide on appropriate actions to preserve sites or even which sites or information to preserve unless the management of cultural resources is related to broad and long term purposes in archaeology and responsibilities to the public.

The latter objective-defining archaeology's responsibility to the public -- is fairly easy to achieve. The profusion of federal and state legislation and regulations has clearly established the public responsibility of archaeologists and preservation organizations. The federal laws and regulations establish national policies on responsibilities with regard to a common cultural heritage (see Appendix A for specific provisions of federal and state laws). There is little dispute over the importance to this and future generations of an opportunity to study and appreciate places and things associated with the past. However, a decision on which places and things to preserve and how many of them cannot be made by reference to a perceived public need. The problem of what portion of the past is significant must be decided by asking "how do we study the past?"

Thus the criteria for deciding on the significance of cultural resources come from those who study them -- in the case of archaeological resources, from archaeologists. For archaeologists, the question of whether a site should be preserved and how is related to an evaluation of the site that reveals what information on subjects important to archaeology can be derived from a study of the site. That evaluation must of course change as the discipline of archaeology changes but the community of archaeologists should (and, given the pressures from development and the public, must) be able to decide on current and anticipated research interests in archaeology.

The questions of which sites are worth preserving and what methods are appropriate to preserve them are at the core of a comprehensive state plan. The preservation of all or even most archaeological sites is impossible and, in any case, not desirable. There are legitimate needs for economic development and the use of land and other resources that, in some instances, run counter to the preservation of cultural resources. The preservation, or even the identification and recording of all sites and all the potential information derivable from them, is a task beyond the capabilities of archaeology.

The goal of a preservation program and plan could be better described as the management of cultural resources rather than the simple preservation of sites. Management implies that these resources are conserved for the purposes of archaeology and the public benefit in a program that best balances the various interests involved. In this regard, the existing archaeological programs of the PHMC can be seen as the necessary context for a CRM program. A program of cultural resource management must develop policies and procedures that reconcile short-term conflicts of interest in a long-term approach that balances those interests.

"Significance" -- the value of specific cultural resources to the scientific community and the public -- thus becomes the core of a program of archaeological preservation. The definition of which sites are significant and how the significance of a site is to be evaluated are the central points of a state plan. Only if these are defined is it possible to plan the use of cultural resources -- to decide which sites are to be preserved, why, how, and for whom. Several approaches to defining significance have been tried. These are discussed in Chapter 3.

Beyond the definition of significance and the satisfaction of legal requirements, a state plan should have another purpose: public education and information. The plan should be available to planners, agencies, and archaeological investigators and consultants as a guide to incorporating preservation in their activities and to complying with federal and state laws and regulations on the protection of cultural resources. For this purpose the plan includes a summary of culture history, a description of PHMC programs and the activities of amateur and professional organizations, and a summary of federal and state, laws and regulations and PHMC policies.

The general goals of a cultural resource management plan are those of any management plan: 1) defining goals and priorities that correspond to the philosophy and needs of preservation, 2) developing programs, procedures, facilities, and guidelines that address those goals,

3) implementing those programs and procedures, 4) periodically evaluating the program and modifying it. It is essential that the plan be viewed as a working document to be modified and adapted to changing circumstances. Programs and procedures will change with the growth of archaeology as a discipline, changes in laws and legally mandated procedures, and the economic conditions influencing development and its effect on cultural resources.

The goals and priorities of preservation in Pennsylvania have been outlined above and are summarized in the policy established by the National Historic Preservation Act and supporting laws and regulations (see Appendix A). The programs and procedures have, since NHPA in 1966, been largely focused on the review of federal, and later, state-assisted projects. The requirements set forth in NHPA and expanded by subsequent laws and regulations (NEPA, AHPA, ARPA, Executive Order 11593, 36CFR800, 36CFR63, etc.) have occasioned most of the archaeological work occurring in Pennsylvania in the last ten years. This compliance with Section 106 of NHPA is often equated with cultural resource management in the minds of archaeologists working as contractors, but it should be clear from the above discussion that it is simply one (short-term) approach to the management of cultural resources. Section 106 review should be viewed as one component in a program including a statewide survey, registration of historic and archaeological properties, problem-oriented archaeological research, the curation of material collected during archaeological investigations, and public education. A primary objective of the plan should be to define uniform standards for the review process and integrate review and contract archaeology into an overall management program. Too often in the past, the low quality of contract work can be blamed on a failure by preservation agencies to establish the importance of individual contract investigations to a comprehensive preservation program. Contractors have frequently satisfied only the basic responsibilities of their contracts and failed to develop problem-oriented investigations which would link their work with broader research interests in archaeology. As a result, contract work has often contributed little toward the goals of either cultural resource management or general archaeology. The state plan, while not a cure for poorly conceived or executed contract archaeology, can set minimum standards for review and acceptance of proposals and reports, and requirements for contractors to conform to preservation goals. The description of the review procedure (Chapter 3 and Appendix H) and standards of performance (Appendix B) are attempts to meet this goal.

1.3 Approaches to Cultural Resource Management

A general recognition of the need for uniform standards and a practical procedure for the comprehensive state plans mandated by NHPA led the Heritage Conservation and Recreation Service (HCRS) to publish a Resource Protection Planning Process (commonly known as RP3) (U.S. Department of the Interior 1980a) to guide state preservation offices in writing adequate plans. Further, HCRS made available funds to support the writing of state plans according to the RP3 format. Massachusetts and Arkansas were selected as test cases and provided with money to develop comprehensive state plans to serve as models. The results -- the

Massachusetts plan published in 1980 (Massachusetts Historical Commission 1980a) and the Arkansas plan, due shortly (Davis, in press) -- were sufficiently encouraging to move HCRS to contract with an additional ten states willing to use the RP3 model in return for funds. The results of this effort are inconclusive at present since most of the plans are incomplete. The success of RP3 is difficult to judge, with various opinions about it held by those involved.

The RP3 model may be summarized as follows:

1) Organize existing data for the entire planning area in commonly recognized and manageable study units.

2) Organize data within the study unit, using professional contributions and advice to identify and evaluate the extent and nature of resources within a unit.

3) Establish an ideal management strategy for a unit including preservation priorities and significance criteria.

4) Modify the above strategy to incorporate social and environmental factors.

5) Develop an operating plan for each reflecting both the need to protect significant sites and to incorporate priorities reflecting economic and social realities. Such an operating plan should provide its users with direct and practical directions for resource protection within a unit.

6) Define the process for regular review and modification of the operating plan or study units.

The advantages of the RP3 approach are several. First, it explicitly recognizes that the goal of a state plan is the management of cultural resources -- not simply preservation or the administration of a program. Second, the RP3 model provides for comparability in state programs and plans, uniformity of standards and goals, and at least some consistency with federal policies. Third, it is sufficiently general to permit its adaptation to a wide variety of situations. The widespread adoption of certain features of the RP3 approach, such as the definition of study units, by almost all states now developing state plans indicates that this model is valuable in giving direction and scope to their efforts (Chesler 1981, Downer 1980, Massachusetts Historical Commission 1980b).

The approach adopted for the Pennsylvania plan attempts to combine aspects of the RP3 model with modifications which will remove some of the ambiguity in applying the plan. Study unit definition (see Chapter 1, Volume II) seems a reasonable and efficient way of organizing archaeological data. Most of the archaeological research in the Commonwealth has been conducted with at least an implicit recognition of the study units as defined in the plan -- physiographic regions and culture historical period subdivisions. The summarization of study unit knowledge serves as the basis for developing significance criteria (Chapter 3) and management policies. The specific recommendations on research data requirements and research strategies have been combined with general criteria for significance to yield unit-specific recommendations for preservation priorities. Explicit operating plans have been avoided, however, in an attempt to allow a degree of flexibility in the daily use of the plan. Nevertheless, it should be clear, by consulting the study unit summary recommendations, which sites are to be protected, what measures are appropriate to protect them, and what areas of the Commonwealth are in greatest need of survey.

1.4 A User's Guide to the Plan

The use of the plan requires a consideration of 1) the individuals, groups, or agencies concerned with the conservation of archaeological resources or compliance with preservation law, 2) their needs, interests, and responsibilities, 3) the information contained in the plan that is relevant to those needs, interests, and responsibilities, and 4) a practical approach to finding and using this information. This approach is outlined in the following sections (1.4.1, 1.4.2).

1.4.1 Organization of the Plan: Information vs. Procedure

The plan can be divided into two major parts. There are, first, those sections whose purpose is primarily to summarize reference information. These include Chapters 1, 2, and 4 and Appendices A, B, C, D, E, F, G, and I of Volume I and all of Volume II. These sections provide information for a variety of readers on a range of subjects: the history and organization of the PHMC; known archaeological resources and regional survey programs; PHMC policies on collections, research standards, burials, etc.; institutions with archaeological programs and educational resources.

The second group is composed of those sections which, while broadly informative, also provide details of procedures to be followed in complying with preservation law and PHMC regulations, and standards for the evaluation of compliance, research adequacy, and archaeological significance. These include Chapters 3 and 5 and Appendices B, C, F, G, and H. It is expected that these chapters will be of particular importance to agencies and contractors in fulfilling their legal obligations to protect archaeological resources. It should be stressed that the proposed information contained in the plan is intended as a guide and provided as an aid in both short-term and long-term planning by agencies or persons whose projects or activities may affect archaeological resources. Changes in preservation laws, regulation and procedures are occurring constantly. The document cannot serve as an official guide for compliance. Final authority in matters of compliance lies with the PHMC. The BHP should be consulted at the earliest possible stage in project planning to insure the adequacy of compliance procedures.

1.4.2 Users of the Plan and Their Needs

Several groups share a common interest in the conservation of archaeological resources whether through personal or professional concern or through legal responsibility. Each of these groups can use this plan for its own purposes while complying with the common goals of preservation.

1.4.2.1 The Pennsylvania Historical and Museum Commission

The plan has an obvious use for the PHMC, in particular the Bureau for Historic Preservation in the review of projects under Section 106 of the NHPA and Section 10 of the PHPA and in long-term planning. Proceeding according to the steps outlined in Chapter 3 and Appendix H, the PHMC uses the resource information and priorities presented in Chapter 4 and the study unit summaries (Volume II) to reach decisions on the need for archaeological survey, the adequacy of survey proposals, and the significance (National Register eligibility) of any resources potentially affected by a project.

The plan also provides a reference by which to evaluate the curation of collections, treatment of burials, site reporting, and the activities of amateurs. With regard to amateur archaeology, the plan, both in its use and in the process of revision, provides an opportunity for the involvement of amateur archaeologists and encourages the adherence of amateurs to uniformly high standards of performance.

The informational sections of the plan fulfill part of the PHMC's responsibility for the education of the public on archaeology and preservation, although the limited distribution and narrow focus of the plan prevent it from satisfying the broader educational requirements mandated by the PHPA and previous Commonwealth legislation. These requirements are satisfied by a comprehensive program of publications, exhibits, and public archaeology (see below, section 5.2.4).

Finally, the data in Chapter 4 and the study unit summaries in Volume II, used with the recommendations in Section 5.2 aid the PHMC and the BHP in particular in the identification of survey needs and preservation priorities in long-term planning. The updated versions of the study unit summaries and the list of factors affecting archaeological resources in Chapter 4 should be of the greatest relevance in this effort and in the formulation of future Commission policy.

1.4.2.2 Government Agencies, Permittees, Grantees, Contractors

The needs of this group -- those whose activities may or will affect archaeological resources -- are very similar to the interests of the PHMC: information and procedural details to allow planning for compliance with preservation law. Likewise they (agencies, etc.) may find guidance in procedures in Chapter 3 and Appendix H and use the information on archaeological site distribution (study unit summaries; Volume II) and sensitivity to effects (Chapter 4) in both the short and long-term planning of their activities. As mentioned above (Section 1.4.1), use of these guidelines should not be considered a substitute for consultation with the BHP in planning for the protection of archaeological resources.

Agencies and others in this group may also find relevant the summaries of preservation law (Appendix A), research standards (Appendix B), site reporting procedures (Appendix C), and curation guidelines (Appendix G). These sections give agencies and planners some indication of the standards for contract archaeological work acceptable to the PHMC.

Agencies involved in the long-term planning of activities which typically have substantial effects on archaeological sites (see Chapter 4) should carefully review the information in the study unit summaries on regional patterns of site distribution. Consideration of these general patterns in the early stages of planning may save time and money on the later mitigation or avoidance of adverse effects on archaeological properties.

1.4.2.3 Professional Archaeologists

Whether as contractors or as independent researchers in Pennsylvania archaeology, professional archaeologists will find the research standards in Appendix B important in evaluating the adequacy of proposals and reports subject to the review of the PHMC. Both the review and permitting procedures outlined in Appendix H will, likewise, be important considerations. Additional information on compliance in Chapter 3 and Appendices C, F, G will be relevant to particular cases.

Beyond aid in compliance, the plan offers the professional archaeological community in Pennsylvania a unique opportunity for cooperation with the PHMC in the common concern with resource conservation. Professional archaeologists should not only use the information contained in the plan for various purposes -- compliance with preservation law, guidance in research design, cooperation with amateur archaeologists -- but contribute to the revision and development of the plan. The primary, although certainly not the only, means to this end is through the involvement of the Pennsylvania Archaeological Council (PAC) in revisions of the plan (as described in Section 5.3), and in the preparation of the study unit summaries. However, professional archaeologists can contribute on a less formal and more frequent basis, through continued submission of data and criticism to the BHP. This participation by the archaeological community, both professional and amateur, is essential if the information on culture history, ecology, site distribution, current research, chronology, and activities threatening cultural resources in Chapter 4 and the study unit summaries of Volume II is to be kept current and useful.

1.4.2.4 Amateur Archaeologists

As with professional archaeologists the potential contribution of amateurs to the revision and improvement of the plan may be as important as their use of it. The wide geographic coverage and field knowledge offered by the amateur archaeological community, particularly that portion represented by the Society for Pennsylvania Archaeology, Inc. (SPA), makes it imperative that its members be involved, on both a formal and informal basis (see Section 5.3), in the review and updating of the plan, especially the study unit summaries. Well-organized programs of survey and site recording, encouraged by both the SPA and the PHMC, could be a major contribution to both the plan and the overall archaeological program of the PHMC (cf. Sections 2.4, 2.4.1 and Chapter 5).

Information pertinent to the regular activities of amateurs, particularly the important role they play or could play in monitoring compliance with preservation law in cooperation with the PHMC, is contained in Chapters 3 and 4 and Appendices A, B, C, and H. Amateurs wishing to involve themselves more fully in this aspect of PHMC activities should familiarize themselves with the material in Volume II pertaining to their local region and the outline of review procedures in Chapter 3. This effort could be more effective if individual and chapter members of the SPA were included in a formal monitoring program, perhaps cooperating in this with PAC members.

CHAPTER 2
Archaeology and Historic Preservation in Pennsylvania

2.1 The Development of Archaeology and Historic Preservation in Pennsylvania

The current archaeological program of the Pennsylvania Historical and Museum Commission is the culmination of a long history of archaeological investigations and preservation efforts. A number of more detailed histories of both archaeology and preservation in Pennsylvania exist, documenting the involvement of the PHMC in these fields. The following section draws heavily on a few sources (Kent 1967, Mason 1955, Turnbaugh 1974, Witthoft 1950) which should be consulted for further details on any of the topics briefly discussed here. This is intended as no more than an outline of the influences on the development of scientific archaeology in Pennsylvania and a synopsis of the important contributions to that field. The individual study unit summaries (Volume II) should be consulted for historical information on a particular region.

Although the advent of archaeology as a systematic and anthropological study in Pennsylvania is relatively recent, it predates many similar developments in other states (except New York; see Witthoft 1950: 301) and the foundations of Pennsylvania archaeology date to the early days of the Commonwealth. Perhaps the clearest way to view this development is in the framework proposed by Turnbaugh (1974), who divides the history of the discipline in Pennsylvania into periods, as follows (dates approx.):

- I. Encounter and Observation (1600-1820)
    - A) First contacts (1600-1700)
    - B) Closer prospectives (1700-1800)
    - C) The passing of the era (1800-1820)
- II. Antiquarian Activities (1800-1915)
    - A) Hiatus (1820-1865)
    - B) New Directions (1865-1915)
- III. Institutional Professionalization (1915-1950)
    - A) Transition (1915-1929)
    - B) Statewide Integration (1929-1950)
- IV. Scientific Archaeology and Collector Consciousness
    - A) (1950-).

Although archaeology as a distinct and self-conscious discipline did not emerge until the mid-nineteenth century (Turnbaugh's "Antiquarian Activities" - Period II; cf. Willey and Sabloff 1974), the previous period, beginning with the first contact of Europeans and native Americans ca. 1600, saw important contributions to the archaeological study of prehistoric Pennsylvania cultures in the form of ethnographic or ethnohistoric information contained in the descriptions of early travelers and settlers. John Smith, for example, wrote of his encounter in 1609 with a band of Susquehannocks near the Chesapeake Bay in Maryland (Arber 1895). His account contains a description of their dress, behaviour, and the location of their villages (included on Smith's map of 1612). This and similar original sources, such as Rev. Thomas Campanius Holm's description of the Delaware Valley natives and their language (Holm 1834), provide ethnographic information useful in the interpretation of archaeological information from Pennsylvania. Despite being colored by unfounded speculation on the origins of Indian groups, such as William Penn's belief that they were remnants of the Lost Tribes of Israel (Penn 1906), these accounts provide valuable firsthand documentation of aboriginal liefways. Later missionary and travelers' journals provide more detailed and systematic descriptions of the Indian groups encountered as the settler population of the colony expanded during the 18th century. These journals, like those of the Moravians, collected and translated by Beauchamp (1916), and the account of Conrad Weiser (Wallace 1945) approach modern standards of ethnographic description.

By the close of the 18th century most native Pennsylvania groups had been destroyed or pushed elsewhere. One of the few remaining groups, the Delaware, were described in considerable but questionable detail by John Heckewelder (1819). The hiatus in contemporary interest described by Turnbaugh for the period 1820-1865 coincided with the disappearance of native inhabitants and the focus of intellectual interest elsewhere.

The first real surge of interest in the prehistory of Pennsylvania and the widespread recognition of its relationship to excavated and surface artifacts coincided with a general awakening, during the mid-nineteenth century, of antiquarian interest in the rest of the U. S. and Europe (Willey & Sabloff 1974, Daniel 1967). Related in part to the development of Natural History and Darwinian Theory, this new interest found expression in Pennsylvania, as elsewhere, in the growth of local scientific and historical societies, whose activities included the collection and study of artifacts, rocks, and fossils. The Wyoming Historical and Geological Society of Wilkes-Barre, founded in 1858 is one example of the numerous local societies where papers on local archaeological items regularly appeared at meetings and in journals, along with studies of geological and natural historical subjects. Notable during this period is the work of William Beauchamp and Arthur Parker in New York, and John Ruth and Henry Mercer in Pennsylvania (Wittheft 1950). Ruth was a collector and amateur naturalist who noted differences among the artifact collections from several sites comparable to those found by Beauchamp in his New York State material, although both were unable to satisfactorily explain the variability. Mercer's interest in the antiquity of the Delaware Valley (Mercer 1885) led him to excavate at a site reported by Ruth, without, however, leaving any systematic notes or records of his collections. The laxity in methodology typical of this and similar excavations of the period was matched by the lack of a developed theory concerning the meaning of the excavated material. The archaeological "model" -- if it may be called that -- ascribed all artifacts to the Iroquoian (eg. Susquehannock) or Algonkian groups or their direct predecessors known at contact. An attempt at a slightly more scientific approach to archaeology is suggested by an archaeological survey of the Delaware and Susquehanna Valleys by the Numismatic and Antiquarian Society of Philadelphia in the late 1880's (Witthoft 1950:303) and other regional surveys of the Monongahela River basin (Thomas 1894) and the North Branch of the Susquehanna River (Murray 1931).

A leading influence in this period was that of the several learned societies located in Philadelphia -- the American Philosophial Society and the Academy of Natural Sciences, for example -- which were instrumental in organizing scientific research including archaeology and as a forum for archaeological discussion, in addition to acting as an inspiration for numerous local societies. However, these societies, although situated in Philadelphia, were national in scope and much of their influence was directed outside the state.

In Pennsylvania, the earlier part of the 19th century was marked by a hiatus in antiquarian or archaeological interest. A shift occurred only gradually during the latter half of the century as a handful of active and well-established local societies arose -- the Muncy and Wyoming Valley societies, for example -- whose interests are reflected in their journals and the papers presented at their meetings. Concern with archaeology in Pennsylvania remained, however, largely an affair of amateurs.

The first steps toward a professional study of archaeology in Pennsylvania occurred at the beginning of the 20th century (Turnbaugh's "Institutional Professionalization" period) with the formation of a state museum in 1905 and the creation of the Pennsylvania Historical Commission in 1913 (Kent 1967, Nichols 1967), followed in 1929 by the organization of the Society for Pennsylvania Archaeology (Mason 1950). Developments in Pennsylvania mirrored a similar trend to professionalization in the discipline at large -- a shift to a concern with culture historical classification and a new consciousness of methodology and technique (cf. Willey & Sabloff's Classificatory-Historical Period). These forces removed archaeology from the realm of amateur endeavors and brought it more into line with concurrent changes in geology and the natural sciences. Graduate degree programs at major American universities emphasized the newly professional character of the discipline and its ties with anthropology. They produced a generation of archaeologists and anthropologists trained as scientists and possessing professional academic credentials.

Momentum toward professionalism gradually increased with the institution-building of the first three decades of the century. A legislative act of 1905 (incorporated in the Administrative Code of 1929) established the State Museum and empowered it to receive bequests of relics; to collect, preserve, exhibit, and interpret for the public items relating to the flora, fauna, mineralogy, geology, archaeology, art, and history of Pennsylvania; to use the services of experts in these fields; to loan objects for research and educational purposes; and to publish and sell books, postcards, etc. to the public (Admin. Code (1957) Article 28-A, Sect. 2801-e,h,t,u,v (P. 190 et seq.) summarizes the provisions of the 1905 act).

The founding of the Museum in 1905 was the result of years of effort by concerned individuals. In his report of 1901, the State Librarian, George E. Reed, had urged the use of State Library space as a museum. The removal of several state government offices to the new State Capitol Building in 1907 opened space in the former State Library quarters in the Executive Building. Thomas L. Montgomery in 1906 became Director of the Museum, which occupied its newly-expanded quarters in 1907. The function of the Museum in these early years was largely limited to the presentation of a small number of exhibits including a display of mounted birds and mammals of Pennsylvania, a model of the Oil City region, and the Stober collection of Indian artifacts. This limited collection of archaeological material was soon supplemented by gifts and purchases using funds specifically appropriated by the legislature for that purpose. A concern with collections and display continued to be the focus of the Museum's efforts until 1945, when, as result of the creation of the new Pennsylvania Historical and Museum Commission to replace the former Historical Commission, the State Museum assumed primary responsibility for coordinating archaeological research in Pennsylvania.

The Pennsylvania Historical Commission was founded in 1913 by an act of the legislature and five members were appointed at that time, although they did not assume their offices until 1915. Groundwork for the formation of the Commission had been laid in the preceding years, largely as result of lobbying efforts by Thomas L. Montgomery, the State Museum's director. There was, in addition, a growing and general recognition that a statewide historical agency was needed. That growing consensus was reflected in the formation of the Pennsylvania Federation of Historical Societies, composed of a number of local historical societies, and in the impact of the survey of state records instituted by the American Historical Association's Archives Committee (recorded in the Pennsylvania Archives).

Despite the enthusiasm attending the Commission's formation, a lack of adequate funding meant that its early efforts were largely limited to the erection and maintenance of historical monuments and markers and, later, the acquisition of historical properties (e.g. Fort Augusta's magazine, the restoration of Old Economy). An early concern with archaeology, however, is manifest in the Commission's involvement in the Susquehanna River Valley survey which, although sponsored by the Museum of the American Indian, Heye Foundation, included a member of the Commission (George P. Donehoo). This survey (Moorehead 1916, 1938) involved the examination, by canoe, of the Susquehanna River banks between the New York line and Maryland. During the course of this work up to 200 test pits per day were dug in a search for Susquehannock sites.

This was the first of five surveys sponsored by the Commission between 1913 and 1945. A project of the Tioga Point Museum (Athens, Pa.) (Murray 1921a, 1921b) led to the excavation of more than a dozen sites. Max Schrabisch (1926, 1930) conducted surveys in the Wyoming and Delaware Valleys. His work resulted in the identification of numerous sites, although his interpretations were distorted by romantic conceptions about the discoveries.

The most significant effort of this period is probably that of Frances Dorrance, then director of the Wyoming Historical and Geological Society and later organizer of the Society for Pennsylvania Archaeology and Commission member who, in 1924, began a survey of the eastern portion of the state using questionnaires sent to individuals or groups with an interest in Pennsylvania archaeology. The work was soon expanded in 1926 to include the western half of the state. Some 13,000 letters and questionnaires were distributed, yielding information on 1,900 sites from 1,000 collectors. The survey was taken over in 1928 by the Historical Commission after funding had been obtained from the legislature.

Dorrance was also instrumental in pressuring the legislature (unsuccessfully) for a law to stop the uncontrolled excavation of archaeological sites and (successfully) for a full-time State Anthropologist to work with the Commission. In 1931, Donald Cadzow became the first State Anthropologist.

Perhaps most importantly, Frances Dorrance was the guiding force in the formation of the Society for Pennsylvania Archaeology in 1929 (incorporated 1931) which has since served -- through its annual meetings, local chapters, fieldwork sponsorship, and the journal Pennsylvania Archaeologist -- as the principal means for integrating professional and amateur activities in the state. Dorrance's efforts loom large in the period of statewide integration before 1945-1950 (Turnbaugh 1974).

In addition to the early survey and excavation work sponsored by the Commission during this period, a large amount of work was done under the auspices of the WPA and the National Research Council in the 1930's. The bulk of this work lacked either methodological sophistication or theoretical justification. The results, as well, were poorly recorded and disseminated, greatly limiting the value of the work. However, it served to stimulate much of the later research on the Monongahela and Susquehannock cultures and thus had value despite its defects.

In the years between the wars (1913-1945) the Commission was involved in dozens of projects. Highlights of these efforts include Jones' work at Clemson and Book mounds in 1929; Cadzow's excavation at Safe Harbor (1930-32); Harry Schoff's work in 1937-38 at the 28th Street site, Wesleyville, and McFate; Carpenter's excavation of mounds on the upper Allegheny (1941-42); and various excavations in Fayette, Somerset, and Greene counties in the mid-1930's and early 1940's.

A new period, of "scientific archaeology" in Turnbaugh's scheme, began around 1950. The Pennsylvania Historical and Museum Commission (PHMC) was created in 1945 by an act of the legislature from a merging of the former Historical Commission with the Museum and Archives organization. With this reorganization the Commission, through the State Museum, became more completely involved in directing archaeological research in Pennsylvania. Subsequent reorganization, (in 1956, for example) has defined more exactly the responsibilities of the State Museum and other bureaus.

Concurrent developments in the early 1950's characterized the new period of systematic and anthropological archaeology in Pennsylvania. New institutions arose or were expanded -- the State Museum, the North Museum of Franklin and Marshall College in Lancaster, and the Carnegie Museum of Pittsburgh; in the late 1940's and early 50's the University of Pennsylvania, the Pennsylvania State University, University of Pittsburgh, California State College, Clarion State College, and others during the 1960's and 70's. A new concern with scientific explanation and methodology, characteristic of American archaeology at large, was gradually incorporated into the conduct of archaeology in the state. New techniques -- radiocarbon dating, for instance -- allowed the development of more detailed and accurate chronologies for the prehistory of the region.

A systematic approach to survey was a feature of the Carnegie Museum's Upper Ohio Valley survey project in the early 1950's under the direction of William J. Mayer-Oakes and Don W. Dragoo. This project also marked a new degree of statewide integration and cooperation, as the

Carnegie Museum worked with the State Museum, sharing data and integrating the survey results into a statewide site file (see Appendix C).

The number of Commission-sponsored and directed projects since 1945 is such that only a few will be mentioned here. Between 1945 and 1959 surveys were conducted in Bradford and Tioga counties and in southeastern Pennsylvania and salvage operations were undertaken in Lancaster, Luzerne, Bucks, and Huntingdon counties, in addition to roughtly a dozen problem-oriented excavations (Kent 1967). From 1959 to the present, the number of projects has further increased. A notable example is the Commission's work at Sheep Rock Shelter from 1959 to 1964 under the direction of John Witthoft. The Commission also undertook investigations of various Susquehannock sites throughout eastern Pennsylvania. Early phases of this work were reported by Witthoft and Kinsey (1959). Additional research and salvage excavations of Susquehannock sites were conducted between 1967 and 1978 (Kent 1967, Smith 1977). Beginning in 1972 the Commission began a major program of archaeological studies at its various historic sites and properties. This work has continued until the present.

In 1978 the PHMC initiated a program of regional archaeological surveys involving matching grants from the Commission (using funds provided by the U.S. Department of the Interior for state survey and planning) to various institutions throughout the state. Institutions involved in the Regional Archaeology program included Temple University (survey in southeastern Pennsylvania), the University of Pittsburgh (survey in northwestern Pennsylvania), Carnegie Museum (northwestern and central western region), California State College (southwestern region), the Pennsylvania State University (central Pennsylvania), and Franklin and Marshall College (eastern region).

Another aspect of the PHMC's total archaeological program is its effort to coordinate and improve relations with other Commonwealth agencies on matters of common interest. The best example of this is, perhaps, the Memorandum of Agreement between the PHMC and the Pennsylvania DOT signed in 1966 (see Chapter 4, Section 4.2.2). This MOA provided for the consideration, reporting, and protection of sites affected by highway construction. It remains in effect at present, supplementing the provisions of the national and Pennsylvania historic preservation acts.

The PHMC at present continues its active involvement in archaeology within the state. Increasingly, this has meant review of contract archaeology performed in response to federally-mandated review of land-use projects. To date, over 500 reports are on file with the Commission, representing more than 10 years of state-monitored contract archaeology in Pennsylvania. The development of a coherent and effective policy on archaeological resources protection for the Commission and BHP is one purpose of a state plan.

2.2 Commonwealth Legislation and Policy on Archaeology and Preservation

The outstanding Commonwealth legislation affecting historic and archaeological properties is the Pennsylvania Historic Preservation Act of 1978, enacted in response to the federal initiative embodied in the National

Historic Preservation Act of 1966 (PHPA), and Article 28-A of the Administration Code of 1929. The general intent of these acts is to define a Commonwealth policy on preservation, identify the Commonwealth agencies with preservation duties (the Pennsylvania Historic and Museum Commission and the Historic Preservation Board) and extend to historic and archaeological resources affected by Commonwealth-assisted or licensed activities protection like that given by federal law. Details of the provisions of these laws are presented in Appendix A.

It should be stressed here that these laws (and Article I, Section 27 of the Pennsylvania Constitution described below) provide the basis for a comprehensive policy of protection and preservation for all properties under federal, state, or local government jurisdiction, excluding only those affected by private activities on private land. The full implications of these laws have not yet been realized. The PHMC is currently working to develop a complete and explicit set of regulations derived from the provisions of the PHPA. It is essential, if the PHMC is to adequately monitor the range of activities actually and potentially threatening archaeological resources, that undefined or vague provisions of the PHPA be clarified. The most obvious provision in this category is that permitting the PHMC to conduct or cause to be conducted surveys for archaeological or historic properties in advance of Commonwealth-assisted or licensed projects. Detailing the exact responsibilities and powers of the PHMC and Commonwealth agencies or contractors with regard to the performance, funding, and reporting of surveys will bring this section (Section 2(f)) of the PHPA into line with the federal regulations. The issuance or regulations and arrangements with individual agencies regarding their responsibilities will make clearer the implications of this provision.

The daily operation of the PHMC's preservation program and the monitoring of compliance with preservation law are the duties of the Bureau for Historic Preservation and the responsible officers (see Figure 2.1).

The PHPA also established an Historic Preservation Board to advise and consult with the PHMC on preservation matters. The board is composed of at least nine members, with at least one member from each of the following disciplines: archaeology, architecture, architectural history, history, and historic preservation. Its primary duties are with regard to the review of nominations to the National Register, but it is also given general responsibilities for the review of the PHMC's comprehensive preservation plan and preservation programs.

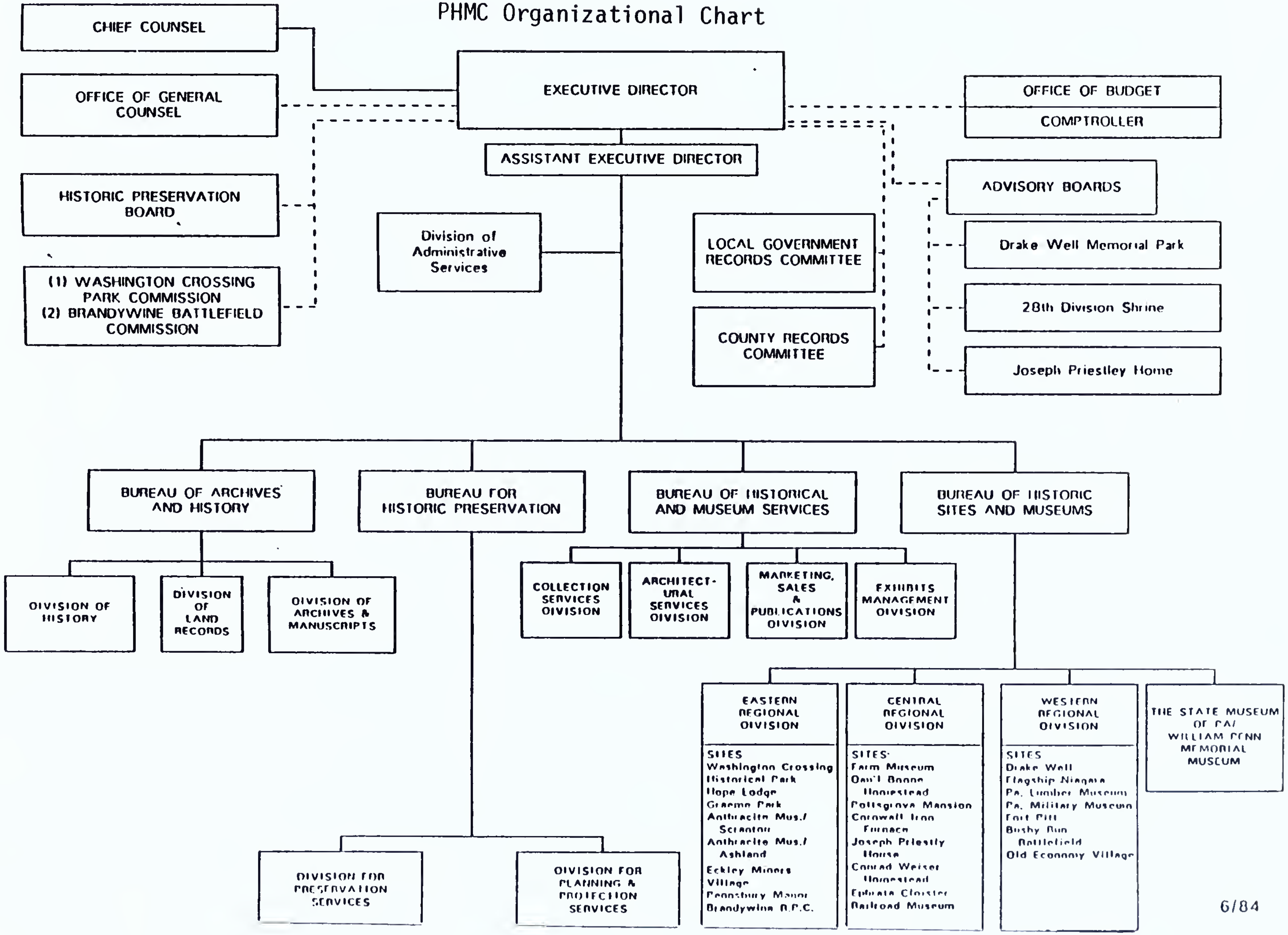
2.3 Amateur Preservation Activities

A potentially significant but largely untapped resource in the protection of archaeological sites in Pennsylvania is the organized body of amateur or avocational archaeologists represented by the Society for

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

Figure 2.1

PHMC Organizational Chart


CHIEF COUNSEL
OFFICE OF GENERAL COUNSEL
HISTORIC PRESERVATION BOARD
(1) WASHINGTON CROSSING PARK COMMISSION
(2) BRANDYWINE BATTLEFIELD COMMISSION
EXECUTIVE DIRECTOR
ASSISTANT EXECUTIVE DIRECTOR
Division of Administrative Services
LOCAL GOVERNMENT RECORDS COMMITTEE
COUNTY RECORDS COMMITTEE
OFFICE OF BUDGET
COMPTROLLER
ADVISORY BOARDS
Drake Well Memorial Park
28th Division Shrine
Joseph Priestley Home
BUREAU OF ARCHIVES AND HISTORY
DIVISION OF HISTORY
DIVISION OF LAND RECORDS
DIVISION OF ARCHIVES & MANUSCRIPTS
BUREAU FOR HISTORIC PRESERVATION
DIVISION FOR PRESERVATION SERVICES
DIVISION FOR PLANNING & PROTECTION SERVICES
BUREAU OF HISTORICAL AND MUSEUM SERVICES
COLLECTION SERVICES DIVISION
ARCHITECTURAL SERVICES DIVISION
MARKETING, SALES & PUBLICATIONS DIVISION
EXHIBITS MANAGEMENT DIVISION
BUREAU OF HISTORIC SITES AND MUSEUMS
EASTERN REGIONAL DIVISION
SITES
Washington Crossing Historical Park
Hope Lodge
Graeme Park
Anthracite Mus./Scranton
Anthracite Mus./Ashland
Eckley Miners Village
Pennsbury Manor
Brandywine B.P.C.
CENTRAL REGIONAL DIVISION
SITES:
Farm Museum
Dan'l Boone Homestead
Pottsgrove Mansion
Cornwall Iron Furnace
Joseph Priestly House
Conrad Weiser Homestead
Ephrata Cloister
Railroad Museum
WESTERN REGIONAL DIVISION
SITES
Drake Well
Flagship Niagara
Pa. Lumber Museum
Pa. Military Museum
Fort Pitt
Bushy Run Battlefield
Old Economy Village
THE STATE MUSEUM OF PA/WILLIAM PENN MEMORIAL MUSEUM

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Pennsylvania Archaeology (SPA) (see Appendix E). With a degree of local contact and coverage of the Commonwealth impossible for either the PHMC or the Pennsylvania Archaeological Council (PAC), the members of the SPA perform a valuable service in monitoring local activities endangering archaeological sites and providing information on these activities to the PHMC or PAC, in the P.A.S.S. site recording program (see below, Section 2.4) and in public education.

2.4 Statewide Survey

An essential part of past, present, and future archaeology and historic preservation in Pennsylvania is a program of statewide survey and recording of sites. The importance of this program for comprehensive long-term cultural resource management is described in Chapter 3. The history and present status of Pennsylvania's survey program are summarized in Appendix C (see also Smith and Herbstritt 1977).

The P.A.S.S. files at the State Museum have become the statewide focus for site recording and survey since the move during the 1950's to centralize information on archaeological site location. Previously, both the State Museum and the Carnegie Museum in Pittsburgh had recorded sites from respectively, the eastern and western portions of the state. With the expansion of its responsibilities and facilities in the late 1940's and 50's, the State Museum seemed the obvious choice for the location of a central site file to record the results of the newly-defined Pennsylvania Archaeological Site Survey (Smith and Herbstritt 1977), incorporating both Carnegie and State Museum programs. A uniform trinomial labelling system was adopted for the site files at both locations. Although all site information from the western part of the state was then duplicated and sent to the statewide file at Harrisburg, Carnegie continued to maintain its own files.

With the centralization of site files at Harrisburg, an important step was taken in the consolidation of archaeological and preservation programs under the direction of the PHMC. Subsequent legislation -- the Administrative Code revisions through 1978 and the Pennsylvania Historic Preservation Act -- has recognized the PHMC and the BHP as the entities with primary statewide responsibilities for the conservation of archaeological resources.

CHAPTER 3

A FRAMEWORK FOR CULTURAL RESOURCE MANAGEMENT

3.1 Introduction

The concept of cultural resource management has emerged in recent years, replacing "preservation" or "salvage" as a guiding principal for the treatment of archaeological resources. The change in terminology is more than a matter of word choice. It represents a shift in the emphasis of "preservation" activities and a refinement in the concept of their purpose. The course of this change can be traced in studies and summaries of the development of "public archeology", "anthropology in historic preservation", "archaeological resource management" or "conservation archaeology" (McGimsey 1972, King, Hickman, and Berg 1977, McGimsey and Davis 1977, Schiffer and Gummerman 1977).

The primary consideration in this shift has been the growing awareness by the archaeological community that the subject matter of the discipline -- the body of information on extinct cultural systems in North America contained in archaeological sites -- is endangered. The multitude of land-modifying activities which have become typical of the modern economic system threaten to partially or wholly obliterate the archaeological record. The gradual awakening by a large number of archaeologists to this threat to the basis of archaeology has stimulated a rethinking of the need for some coherent approach to the resources of archaeology and a reappraisal of methods to insure their continued existence. This awareness is reflected in the PHMC's incorporation of cultural resource management into its archaeological program as an important part of its total responsibility.

Concurrent changes in other areas of "historic preservation"-- notably the variety of legislation and government action in the late 1960's and 1970's -- have profoundly changed the realities of funding and sponsorship for most of the archaeology now done in the United States. The sources of financial support for most archaeology are no longer granting agencies or universities but federal, state, and local government agencies and private industry (Schiffer and Gumerman 1977:1ff.). Unfortunately, the discipline as a whole has failed to adjust to the changed nature of institutional support, with the result of uneven quality in the public archaeology of the past decade. Many archaeologists continued and continue today to equate cultural resource management with "salvage" archaeology and all the implications of low-quality atheoretical work which have accompanied that term. A comprehensive viewpoint, incorporating archaeology done in response to governmental preservation law both theoretically and methodologically into the discipline, has only gradually emerged.

Contract archaeology performed as part of a program of cultural resource management could resolve the conflicting demands mentioned above. Cultural resource management (CRM), as the name implies, involves the management of resources for a variety of purposes -- scientific, public educational, and cultural. Like any program of management it requires the outlining of purposes, goals, constituencies, resources, methods, plans, and procedures for implementing these plans. Unlike salvage archaeology, CRM focuses on the conservation of resources, implying neither wholesale preservation nor the haphazard salvage of portions of the archaeological record. CRM involves the conservation of resources for a purpose and thus requires a consideration of what should be preserved, for whom, for what purpose, and by what means appropriate to the goals and conflicting demands.

3.2 Components of a CRM Program

A satisfactory CRM program has the following components (cf. sections 1.2 and 1.3):

3.2.1 A Statement of Purpose

The general public purposes of the program are expressed in the NHPA and related federal and state laws. The scientific purposes are discussed in several references (King, Hickman, and Berg 1977; Schiffer and Gumerman 1977; etc.). Briefly, the scientific purposes include the conservation of the archaeological data base for current and future research and the coordination of all available information for planning future research.

3.2.2 A Definition of Constituencies

There are several clearly defined groups in Pennsylvania with direct or indirect concerns for the conduct of archaeology. They include groups involved in formulating and carrying out the policies of a CRM program and those whose activities are influenced or controlled by those policies.

(A) The Pennsylvania Historical and Museum Commission falls into the first category, being by law and tradition (see Chapter 2) responsible for the Commonwealth's policies on archaeology and preservation. The PHMC is also directly involved in the conduct of field investigations and the curation and study of museum collections. The Bureau for Historic Preservation oversees the preservation of archaeological and historic resources required by federal and state law.

(B) Professional archaeologists form a group with diverse affiliations. The Pennsylvania Archaeological Council (PAC) is the chief statewide organization representing the interests of professional archaeologists (see Appendix E).

Colleges and universities provide an institutional base for a variety of archaeology and archaeologists, only some of whom are specialists in the archaeology of eastern North America or Pennsylvania. The academic connection provides an important means of integrating Pennsylvania archaeology into the discipline as a whole.

Professional archaeologists now hold positions in a variety of other institutions. The expansion of contract archaeology and the growing involvement of federal and state governments in archaeology have created opportunities for the employment of archaeologists in state and federal agencies, private consulting firms, and university-related or independent "public archaeology" facilities. The acceptance of a role for archaeologists in non-academic organizations has been slow, both within and outside the confines of the profession. Planning agencies and environmental consulting firms have gradually come to realize the advantages of keeping archaeologists on their staffs: the consideration of archaeological resources in planning and review is facilitated and improved in quality when a full-time archaeological staff is involved in the early stages of a project.

(C) A large number of amateurs participate in field and laboratory work and contribute valuable labor and experience to Pennsylvania archaeology. Amateurs have made important contributions to an understanding of Pennsylvania's past since the nineteenth century. They may have an even greater role to play in the future as CRM, particularly the monitoring and mitigation of impacts on sites, becomes increasingly important (see Chapter 5). Although many individuals may be considered amateurs, having some degree of interest and experience in archaeology, the largest organized group of trained and experienced amateurs is the Society for Pennsylvania Archaeology, Inc.: this group most clearly represents the interests of the amateur archaeological constituency.

(D) Planners, developers, and government agencies whose activities affect archaeological resources form a group increasingly concerned with archaeological procedures and regulations. Their activities and the regulations concerning them are examined in Chapter 4, and Appendices A and H.

(E) The last and possibly most important constituency is the general public. The public and their rights to participate in the common cultural heritage are the focus of the NHPA and related laws. Public tax dollars fund the national and state preservation programs and it is to the public that an accounting must be made for the use of that money. The preservation laws of the last two decades make clear the obligation of archaeologists to conserve cultural resources and to provide the public with access to them through preservation and education. The PHMC attempts to meet this responsibility through a variety of public educational programs (described in Chapter 2).

3.2.3 An Outline of the Goals of the CRM Program

(A) Outline the laws and regulations affecting the preservation of archaeological resources (Chapter 1, Appendix A).

(B) Identify and define the various archaeological constituencies; consider their activities and relate these to the provisions of the laws and regulations noted above (Chapters 1 and 4, Section 3.2.2, Appendices A, E, and H).

(C) Identify archaeological resources and summarize the current archaeological knowledge of Pennsylvania (Chapter 4, Appendix D, Volume II).

(D) Evaluate previous research and preservation efforts (Chapter 2; Volume II: study unit summaries).

(E) Define current research and data requirements (Volume II).

(F) Identify threats to archaeological resources (Chapter 4, Volume II).

(G) Define preservation priorities (Chapters 4 and 5, Volume II).

(H) Define the criteria for determining archaeological significance (Section 3.3 and 3.4).

(I) Define and implement programs (survey, National Register nominations, etc.) to gather data on resources and preserve them according the the criteria and priorities defined in (G) and (H) above (Appendices C and D).

(J) Establish standard review and survey requirements and procedures (Section 3.3.2, Appendices C and H).

(K) Establish policies on the curation of collections, treatment of burials, use of site files, site recording procedures, etc. (Appendices C, F, and G).

(L) Recommend procedures for modifying the preservation program (Chapter 5).

(M) Educate the public on the nature and value of archaeological resources (Chapter 2).

(N) Inform other government agencies of their responsibilities with regard to archaeological resources; define procedures by which they may comply with preservation law (Appendices A and H).

3.2.4 An Identification of Resources

An essential step in the management of cultural resources is an initial summarizing of the number, location, and character of known resources. The information on which such a summary is based comes from several sources and is collected in the site files, maps, and museum collections of the PHMC. This information is derived from several primary sources: collection and site recording by amateurs, major survey and excavation projects sponsored by the PHMC and other institutions across the state, the Pennsylvania Archaeological Site Survey (P.A.S.S.), contract archaeological projects, and previous reports and syntheses by a long list of researchers.

Archaeological resources include sites, the features and artifacts from these sites, and collections from sites. Although this includes material of a wide variety, some categories are apparent:

(A) Sites may be characterized as prehistoric or historic. Prehistoric sites are those representing aboriginal occupation of Pennsylvania before the first European contact, ca. 1600, for which no historical references exist. Historic archaeological sites are those from the period after ca. 1600 for which historical references -- on the events and cultural patterns of this period, not necessarily on the sites themselves -- exist. Historic archaeological sites are usually distinguished from historic structures, which are standing portions of a site.

(B) Sites may be characterized by known or inferred cultural affiliation and chronological period: e.g. Paleo-Indian, Archaic, etc. (see Chapter 4).

(C) Sites may be given a functional label on the basis of the assemblages of artifacts and features found there: e.g. "village", "hunting camp", "quarry", etc.

(D) Cultural resources include the collections of artifacts and other material from archaeological sites now housed in museums and laboratories throughout the state. This material includes a variety of non-artifactual samples -- geological, botanical, and faunal specimens -- relevant to the study and reconstruction of past environment and cultural adaptations.

3.2.5 The Development of Methods, Plans, and Procedures to Implement a CRM Program

This step follows from a consideration of purpose, goals, constituencies, and resources. It is treated in detail in the remainder of this chapter and in Chapter 5.

3.3 The CRM Planning Process

3.3.1 Long-Term Planning: The Role of the State Plan

Planning the conservation of archaeological resources is one component of a management program: it is not the equivalent of management or the actual protection of resources but is essential if those activities are to occur. Planning includes short-term management through review and compliance under Section 106 of the National Historic Preservation Act but is not equivalent to the review or mitigation of effects from construction or land-modifying activities. Effective planning begins with a consideration of purpose and goals derived from law and the current state of knowledge about the archaeological resource base and procedes to the development of priorities, procedures for short-term resource management, and the anticipation of future preservation needs.

Responsibility for planning lies with the PHMC as the Commonwealth agency with the legally mandated and traditional task of conserving historical and archaeological resources. The PHMC has, for the past 75 years, engaged in the survey and excavation of sites and acted to protect the archaeological data base from threats. The requirements of federal law have simply added a new aspect to the commission's traditional preservation duties.

It is evident that only a portion of the total threat to archaeological resources is within the control of the PHMC. Under both federal and Commonwealth law, only those activities requiring government licensing, funding, or assistance or which occur on public lands are subject to review by the PHMC. Privately funded actions on private lands are probably more destructive by far then any government-controlled actions and are subject to no review or regulation. This situation will not change unless the unlikely decision is made to revise federal and state antiquities acts. Although individual landowners have decided in some cases to prosecute those disturbing or destroying archaeological sites, the possibility of laws controlling the use of private lands seems slight. Thus, now and in the foreseeable future, the PHMC will be able to conserve only a small part of the total resource base.

It is nevertheless important that PHMC planning include the full range of Pennsylvania's archaeological resources. In the case of sites on privately owned land, an alternative to a legal solution might be a program of public education to make private landowners aware of the problem and encourage their voluntary cooperation in protecting sites on their properties. Public education to promote the protection of resources under public as well as private control should, in general, be a prominent part of planning and management. Regardless of how aware and committed private landowners are, however, there is a need for planning and management of the total resource base according to uniform standards of conservation. This remains the responsibility of the PHMC.

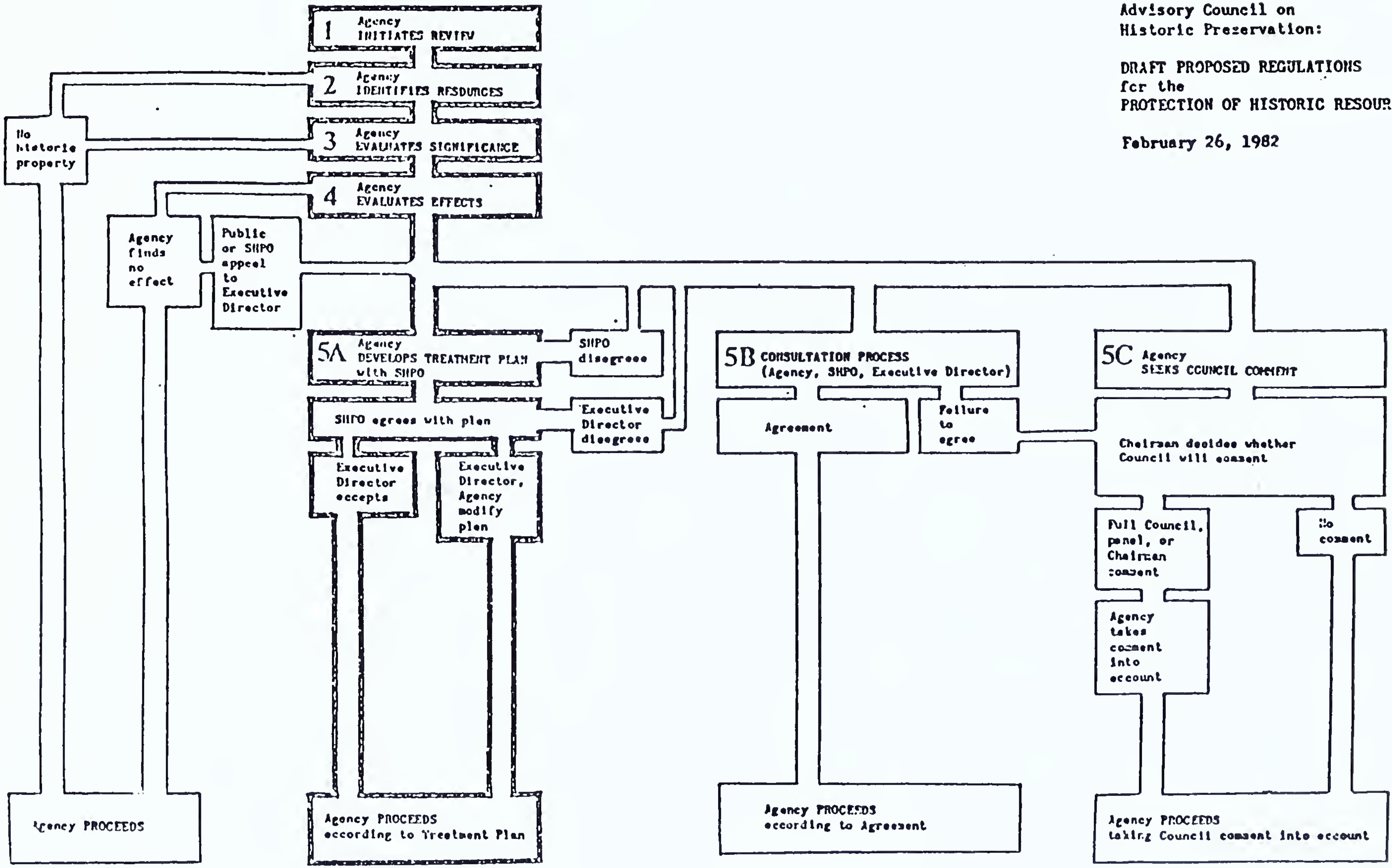
3.3.2 Short-Term Management: Project Review and Section 106 Compliance Procedures

The responsibilities of the PHMC with regard to federally-assisted or state-assisted projects were established by the National Historic Preservation Act (NHPA) of 1966, the Pennsylvania Historic Preservation Act of 1978, and other related laws. The procedures entailed in complying with these laws and regulations, those used by the PHMC in reviewing federally-assisted projects, are described in detail in Appendix H and presented in summary below. Figures 3.1, 3.2, and 3.3 summarize, respectively, the general federal (Advisory Council on Historic Preservation) procedure for Section 106 review, the PHMC's definitions and procedures for review and survey, and the review procedure in flow chart form.

In outline, the procedure is as follows: The PHMC (Bureau for Historic Preservation) must be notified of any project or undertaking assisted or licensed by the federal government or Commonwealth which will or may have an effect on cultural (including historic and archaeological) resources. Notification is made by the federal agency or its contractor, grantee, or licensee directly to the PHMC. It is the agency's responsibility to identify cultural resources listed in or eligible for the National Register which may be affected by the proposed project. This is

Figure 3.1

Advisory Council Procedures


1 Agency INITIATES REVIEW
2 Agency IDENTIFIES RESOURCES
3 Agency EVALUATES SIGNIFICANCE
4 Agency EVALUATES EFFECTS
No historic property
Agency finds no effect
Public or SHPO appeal to Executive Director
5A Agency DEVELOPS TREATMENT PLAN with SHPO
SHPO disagrees
SHPO agrees with plan
Executive Director disagrees
Executive Director accepts
Executive Director, Agency modify plan
5B CONSULTATION PROCESS (Agency, SHPO, Executive Director)
Agreement
Failure to agree
5C Agency SEEKS COUNCIL COMMENT
Chairman decides whether Council will comment
Full Council, panel, or Chairman comment
No comment
Agency takes comment into account
Agency PROCEEDS
Agency PROCEEDS according to Treatment Plan
Agency PROCEEDS according to Agreement
Agency PROCEEDS taking Council comment into account

Advisory Council on
Historic Preservation:

DRAFT PROPOSED REGULATIONS
for the
PROTECTION OF HISTORIC RESOURCES

February 26, 1982

usually done by requesting information from the Bureau for Historic Preservation (BHP) on the project's potential for affecting cultural resources. The BHP maintains files and maps of all known archaeological sites in Pennsylvania, including sites listed or eligible for the National Register. If sites are known to exist in the project area or if the environmental context and information from the study unit summaries suggest that there is a high probability of encountering sites, the BHP will request that the agency arrange for a survey (see Appendix H and Figure 3.2 for details) to identify all cultural resources in the area. If no sites are known in the project area and the available information (study unit summaries, previous survey and excavation results, predictive models of site location) suggests that there is a low probability of encountering sites, the BHP may determine that the undertaking will have no effect on archaeological resources and that the project may proceed. The same determination may be made in the case of an undertaking that affects an area previously surveyed (according to standards acceptable to the BHP) or so heavily disturbed that there is little likelihood that any sites remain intact. In either case, an undertaking must be halted if sites are discovered in the course of work until the BHP can be consulted and an agreement reached on steps to protect the cultural resources or to mitigate the effect of the undertaking on them.

If Phase I survey is required, the agency is responsible for contracting with a qualified professional archaeologist to perform the work. Minimum qualifications of a professional archaeologist are given in Appendix B. The Bureau will usually provide a list of qualified researchers upon request. The results of the survey determine further action (see Figure 3.2). If no sites are found, the BHP may determine that the project will have no effect on archaeological resources. If sites are found during survey or if sites were found in consulting the site files, the BHP will, after requesting Phase II testing and evaluation (Figure 3.2), apply the criteria for eligibility (36CFR63) to determine whether the sites are eligible for the National Register and thus entitled to protection under federal law.

In either case, the agency bears the responsibility of insuring that an adequate attempt is made to identify, through survey and consultation with the BHP, all cultural resources within the project area. This responsibility includes the submission to the BHP of an acceptable report (see Appendix H for report standards) on the survey results with recommendations by the contracting archaeologist on the possible National Register eligibility of any sites within the project area. Under the procedures proposed by the Advisory Council on Historic Preservation (Figure 3.1) the decision on eligibility lies with the National Register, although appeal to the National Register is usually made only in the event of a failure of the State Historic Preservation Officer and the responsible agency official to reach a mutually acceptable agreement.

If no sites in the project area are determined, after Phase II testing and evaluation, to be eligible for the National Register, the project may proceed. If sites listed on or eligible for the National Register are found within the area affected by the undertaking, the

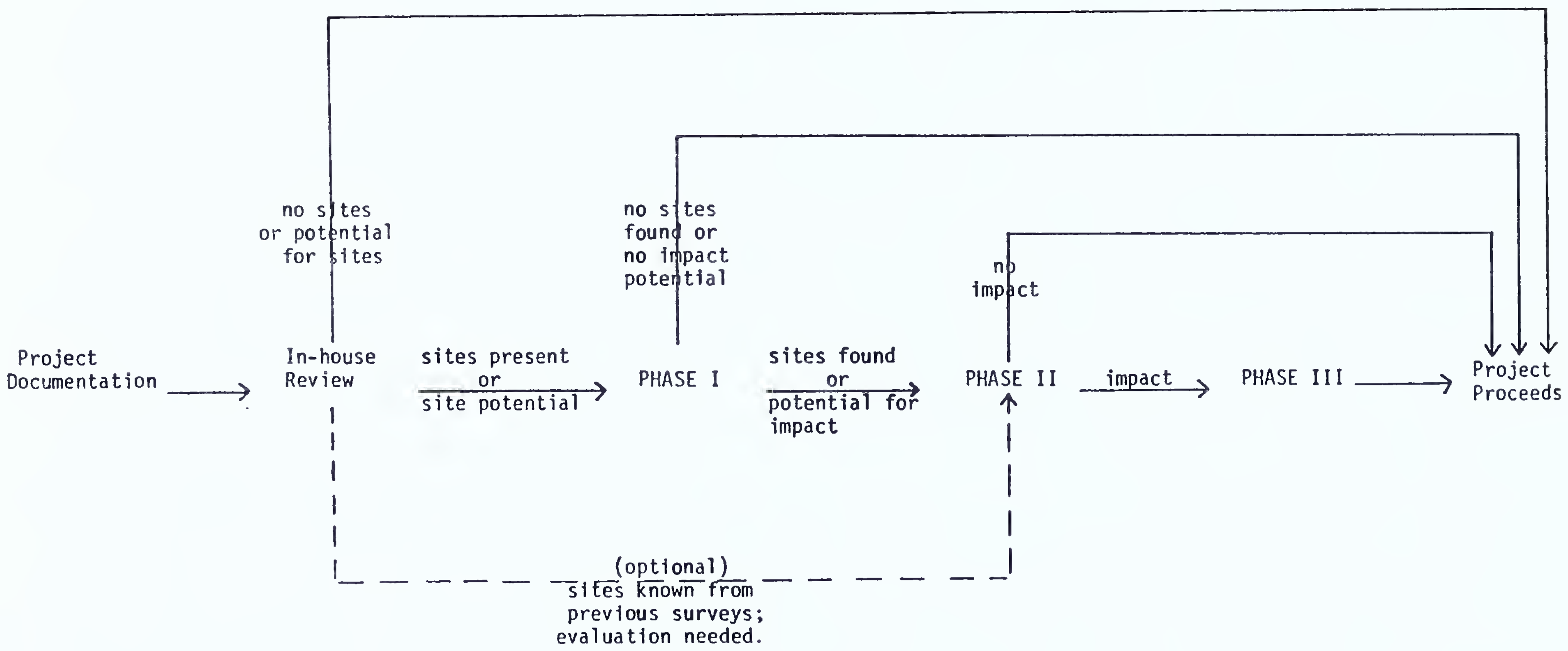
Figure 3.2

PHMC REVIEW PROCEDURES
AND DEFINITIONS

RESPONSIBILITY	LEVEL	DEFINITION	ACTIVITIES	RESULTS
PHMC	In-house review	Identification of potential site locations	Reference to site files and maps	Three possible results of map check: 1) No sites present or possible 2) Some probability: a) too low b) all others 3) Sites certainly present If 1) or 2a): no further review needed, project proceeds If 2a) or 3): Phase I (or II) survey required
Agency/ Contractor	Phase I	Location of cultural resources: site inventory	Proposal submitted (review by PHMC); field survey, report	Sites present/ no sites present If sites present: Phase II required
Agency/ Contractor	Phase II	Testing and evaluation of sites	Sites tested, criteria for significance applied; significance evaluated	Significant sites, if any recorded; recommendations for Phase III
PHMC/Agency	Phase III	Mitigation/ avoidance	Agreement between PHMC and agency on appropriate action to protect archaeological resources	Project impact mitigated

Figure 3.3

PHMC Review Procedure: Flow Chart


Project Documentation
In-house Review
no sites or potential for sites
sites present or site potential
PHASE I
no sites found or no impact potential
sites found or potential for impact
PHASE II
no impact
impact
PHASE III
Project Proceeds
(optional) sites known from previous surveys; evaluation needed.

agency official must, in consultation with the BHP, apply the criteria of effect described in 36 CFR800.3 to determine if and how any archaeological resources are affected by the proposed actions. An effect is defined to exist when any aspect of the undertaking: "causes or may cause any change, beneficial or adverse, in the quality of the . . . characteristics that quality the property to meet the criteria of the National Register. An effect occurs when an undertaking changes the integrity of location, design, setting, materials, workmanship, or association of the property that contributes to its significance . . . " (36CFR800.3) Effects may be either direct or indirect: That is, either occurring at the same time and place as the project or caused by the project and reasonably foreseeable, but removed in time or place. Indirect effects are, understandably, far more difficult to determine (Schiffer and Gumerman 1977: 291-320) but may be equally significant.

If an effect is predicted according to these criteria, the agency, in consultation with the BHP, must decide whether the effect will be adverse. An adverse effect is caused by any aspect of the undertaking which results in: a) destruction or alteration of any part of the property; b) isolation of the property from its surroundings; c) introduction of visual, audible, or atmospheric elements that are out of character with the property or its setting, or which alter its setting; d) neglect of a property leading to its deterioration or loss; and e) transfer or sale of the property without adequate provisions or restrictions regarding its preservation, maintenance, or use.

If no adverse effect is determined to threaten the resources in the project area, documentation on the agreement regarding effect is forwarded to the ACHP for comment and the project may proceed. If either the State Historic Preservation Officer or the Advisory Council disagrees with a determination of no adverse effect, at three-way consultation is begun to resolve the disagreement. This process includes the submission of a "Preliminary Case Report" by the agency to the ACHP. In this case, or when an adverse effect is determined to exist, the result of the consultation is usually a Memorandum of Agreement (MOA) including the findings of the Preliminary Case Report with regard to the nature of the adverse effect(s) and the agreement reached by the parties involved on alternatives for the proposed undertaking that will avoid or mitigate it effect on cultural properties. The MOA specifies the possible alternatives, their effects on cultural resources and the actions the agency must take to mitigate any adverse effects (Phase III: mitigation/avoidance procedures in Figure 3.2).

Several features of this process should be particularly noted: First, the responsibility for the identification of resources through survey and other means, the documentation of their significance with regard to the National Register criteria, and any actions necessary to mitigate the effects of an undertaking lies clearly with the agency or its contractors, grantees, or licensees. The agency is responsible for documenting to the satisfaction of the BHP the existence or non-existence of sites and their potential eligibility for the National Register. The burden of proof lies with the agency.

Secondly, the SHPO, through the staff of the Bureau for Historic Preservation, decides on the need for survey (Phase I/Phase II), evaluates the adequacy of the survey report(s), comments on the eligibility of all resources identified through survey, and determines the necessity and adequacy of mitigation of effects. Final authority, in cases of disagreement and appeal, lies with the Director of the Advisory Council but the BHP decides these issues in the normal course of review.

Finally, it should be apparent that there are two points in the review process where critical decisions must be made by the BHP. The first is the decision to require or not to require that a survey be performed. It might be reasonable argued (and has been) that survey should be required in all cases, given the incomplete nature of current information in the site files and the variable quality of previous survey data. However, the BHP adopts the policy that cost effectiveness is a consideration that makes it impractical to require a survey for all projects. As indicated in Figure 3.2, the BHP makes a decision, on the basis of the information at hand (site file data, predictive models, etc.), on the probability of encountering sites within the area of the proposed undertaking. If this probability is low a decision of no effect is reached with the condition that sites encountered during work be reported and that adequate provisions be made for preservation or mitigation before work procedes. A decision that there is a high probability of encountering sites -- because known sites are listed in the site files or because environmental factors and predictive models of site location indicate this -- results in a request for survey. This decision is aided by the information in the study unit summaries (Volume II) and predictive models (of varying degrees of formality) developed from this and other survey data. The decision is not mechanical, but is based on an evaluation of the available information that is as objective as possible. Greater objectivity could be obtained with better regional survey data. For this reason, it is important that the study unit summaries be periodically revised to reflect the current state of knowledge about regional archaeology.

The second critical decision is that made on the National Register eligibility of "significance" of an archaeological property identified during survey or consultation of the site files. The decision is critical because only those resources deemed significant according to the criteria of eligibility are entitled to protection under the law. The problem of archaeological significance and its relation to the National Register eligibility criteria is a complex issue, still much debated (ef. Tainter and Lucas 1983). A brief discussion of the issue and some practical guidelines for the determination of significance by the BHP follow.

3.4 Archaeological Significance

Protection of archaeological resources under the National Historic Preservation Act (NHPA) and associated laws (NHPA, AHPA, DOT Act of 1966) is provided for those resources considered significant at the national, state, and local level. Since protection is offered only to those resources which are significant, the problem of selecting criteria by which to determine significance has become a central issue in cultural resource management.

Both long-term planning and short-term management of resources depend ultimately on a means to select significant and, thus, protectable sites.

The requirements of preservation law are, at least superficially, straighforward: The corpus of preservation law (with the exception of the DOT Act, which uses slightly different standards) sets as its standards of significance the criteria of eligibility contained in the NHPA. These provide that a property be considered significant if: a) it was associated with events that have made a significant contribution to the broad patterns of our history; or b) it is associated with the lives of persons significant in the history of the nation; or c) it embodies the distinctive characteristics of a type, period, or method of construction, or it represents the work of a master, or it possesses high artistic values, or it represents a significant and distinguishable entity whose components may lack individual distinction; or d) it has yielded, or may be likely to yield, information important in prehistory or history. (36CFR60.4)

The fourth and, occasionally, the first criterion are the ones usually applied to archaeological resources. A property satisfying any one of these criteria is eligible for listing on the National Register and, thus, entitled to protection. (Actual National Register listing is not necessary; this is obtained through an additional process of nomination and review described in 36CFR60.)

The problem arises with the application of these very general standards to actual archaeological cases. It has been argued that all sites are significant according to the fourth criterion since, given the current state of archaeological knowledge (or ignorance), almost any site may yield information important in prehistory. A debate continues among archaeologists on the problem of determining archaeological significance. This debate is amply documented and too complex to address here. Those interested should refer to any of the following: King, Hickman and Berg 1977: 95-104; McGimsey and Davis 1977: 31-34; Raab and Klinger 1977; Schiffer and Gumerman 1977: 239-290; Schiffer and House 1977; North Carolina Dept. of Cultural Resources 1978, n.d.; Tainter and Lucas 1983.

Several types of significance may be relevant to archaeological resources (Schiffer and Gumerman 1977: 239-247): scientific, historical, ethnic, public legal, or monetary. However, the consensus among archaeologists is that scientific significance is the appropriate standard to apply in linking the federal requirements for eligibility to cultural resource management. This is not to deny that other standards -- public or ethnic significance, for example -- may be relevant in certain cases. If the goal of CRM is to be the conservation of resources for scientific use, however, than the standard of scientific significance is most appropriate.

Although a number of standards for assessing the scientific potential of a resource have been suggested -- the cost of data recovery, the rarity of the resource, the representativeness of the sample, and the relation of the resource to regional or larger-scale research questions -- only the last two have won wide acceptance. The potential for obtaining statistically representative data from a site is a strong argument for the scientific significance of a site. The importance of a representative sample is apparent if the possibility of new and currently unimagined research problems is considered. Since we cannot know what research problems will become important in the future, it has been argued that we should attempt to preserve a representative sample of all the available archaeological data, unbiased by current perceptions of what is important. The history of archaeology certainly confirms the necessity of considering the possibility of presently unforeseen data requirements before the careless destruction of potentially valuable information or the single-minded preservation of one small portion of the data base. However, the preservation of a representative sample does not insure the preservation of sufficient data bearing on specific current research problems. While acknowledging that consideration should be given to preserving some representative sites as sources of data for future, as yet undefined, research questions, it seems more immediately important that sites be preserved for their relevance to major current research questions or themes.

The scientific potential of sites for addressing current research questions is the most widely accepted measure of significance. By this criterion, a site is considered significant if it contributes to the understanding of current research questions of regional or larger scope. This approach has the advantage of relating cultural resource management directly to the present state of archaeological theory and data. It has the disadvantage of risking the loss of potentially useful data bearing on some presently undefined research problem. Ideally, the combination of the two approaches would both relate CRM to current archaeology and allow for unforeseen developments in the discipline.

If significance is defined primarily by relevance to major research problems then it is essential that a Pennsylvania CRM program define those research themes -- those of national scope (cf. King 1982) and those of relevance to the archaeology of Pennsylvania and its study unit regions. The state plan attempts to do this in the study unit summaries (Volume II) and the general synopsis of Pennsylvania cultural historic (Volume II, Chapter 2). The summaries provide the background information for decisions on the significance of sites and the protection to be afforded them under federal law. These decisions about significance have a further importance in developing preservation priorities and planning for a CRM program.

There is no completely mechanical approach to the evaluation of significance: flexibility and an opportunity for the exercise of professional judgement are essential if significance determinations are to reflect the changing orientation of archaeology and the continual additions to our archaeological knowledge. The procedure outlined below is an attempt to deal with the determination of significance based on the current understanding of Pennsylvania's prehistory and history. The criteria presented here should be considered guidelines, subject to periodic revision as our knowledge improves, not final or absolute statements of what is and is not significant.

3.5 PHMC Evaluation of Site Significance and National Register Eligibility

If scientific potential is adopted as the primary criterion of archaeological significance and if relevance to major research themes or problems is used as the standard for scientific potential, then the summaries of regional archaeology and the general synopsis of Pennsylvania culture history in Volume II can serve as the basis for evaluating the significance of archaeological sites. The anthropological/archaeological themes and questions presented in those summaries suggest that not only individual sites but certain site types, representing broadly-based and widely recognized patterns of cultural adaptation, can be considered significant sources of archaeological data. A consensus among Pennsylvania archaeologists on those significant site types implies that general guidelines for evaluating site significance in individual cases may be derived and justified in terms of the current research themes and interests and categorical data requirements summarized for each study unit.

As noted above (Section3.4) the PHMC avoids a rigid, mechanical approach to the evaluation of site significance. Given the constantly changing state of archaeological knowledge and research interests which are the basis for the evaluation of significance, some flexibility in the process must be allowed. The study unit summaries of Volume II provide a fairly accurate synopsis of the current state of archaeological research in Pennsylvania. However, certain gaps in the information (e.g. Study Unit IV) are obvious and developments in many areas are occurring continually -- making some aspects of these summaries outdated as they were written. The current state of research and knowledge must, therefore, be evaluated by considering a number of sources: the study unit summaries, project reviews and reports submitted to the PHMC, recent and ongoing research reported in journals and monographs, etc.

On the basis of this information the Division of Archaeology and BHP staff evaluates the potential significance of a site by considering the following general questions:

(1) Does the site contain known or potential data related to the research themes or problems outlined in the study unit summaries or derived from the sources mentioned above?

(2) Is the data sufficiently well-preserved, coherent, and recoverable? That is, can the data from the site answer questions derived from these research themes?

(3) Does the value of the data potentially recoverable from the site justify the costs of recovery? To what extent is the data redundant? (Do other sites exist which provide analogous data? Is the site important as part of a regional system or pattern or as a singular data source?).

The determination of significance in this procedure may require consultation by the BHP with professional archaeologists and others familiar with the particular case or local area. The final decision, however, lies with the PHMC staff. In cases of substantial disagreement an appeal and reconciliation process (see Figure 3.1) exists.

CHAPTER 4

Pennsylvania's Archaeological Resources and the Factors Affecting Their Preservation

4.1 Introduction

In the near future planning for the management of archaeological resources will become an increasingly important part of the PHMC's archaeological program. Planning for the protection and use of cultural resources requires a consideration of several factors: (1) the number and nature of the available resources, (2) criteria for determining the significance of the resources, (3) the nature and magnitude of activities threatening these resources, and (4) projections of trends in these activities and their effect on cultural resources.

Information on the cultural resources of Pennsylvania, known and potential, is contained in the site files and maps of the PHMC at the State Museum, in survey reports submitted to the PHMC, and in a summary of the P.A.S.S. statewide survey (Smith and Herbstritt 1977). This information is summarized in the following section and in chapters 2-5 of Volume II. The application of significance criteria to the available cultural resources is discussed in Chapter 3 (this volume). Those activities with a known or potential effect on archaeological sites are considered in Section 4.3 below and in the individual regional summaries of Volume II. Predictions as to the future effects of land development an archaeological resources are presented in chapters 3-5 of Volume II.

4.2 Pennsylvania's Archaeological Resources

The record of human settlement of Pennsylvania spans more than 10,000 years and includes a wide variety of archaeological sites and material. Pennsylvania's archaeological resources include sites from the first occupation of the land in the Paleo-Indian period to sites of the early modern era. These sites represent the presence of several distinct groups living in ways adapted to the particular environmental and historical conditions. The following is simply a brief summary of this long history of settlement. More detailed accounts for various periods and various regions of the state may be found in Volume II.

The state's archaeological resources include archaeological sites, the features and artifacts from these sites, and environmental evidence related to the patterns of human settlement. In addition to the archaeological information still to be recorded from known and unknown sites there is a large body of evidence previously collected and now housed in museums and other repositories across the state. Both sites and collections are important archaeological resources meriting conservation efforts.

Archaeological sites are commonly classified in several ways. In addition to functional categories (e.g. agricultural villages, hunting camps, etc.) several broad chronological divisions are generally recognized. These chronological units are defined both by the types of characteristic artifacts and features and by the inferred patterns of subsistence and settlement. In Pennsylvania the chief chronological units are the Paleo-Indian, Archaic, Transitional, and Woodland. A brief description of each follows.

4.2.1 Paleo-Indian Period

The first known occupation of Pennsylvania dates to the Paleo-Indian period. Although precise dates are lacking and earlier settlement is a possibility, Paleo-Indian groups were certainly settled in Pennsylvania by around 10,000 B.C., a date coinciding with the final glaciation of North America and preceding the establishment of a more temperate climate in Pennsylvania.

Early Paleo-Indian groups would have found a climate considerably different from that characteristic of Pennsylvania today. Although conditions varied from region to region, the climate was, in general, wetter and cooler than at present, influenced by the masses of glacial ice then covering large portions of North America. A tundra or boreal forest vegetation was typical of much of Pennsylvania and a range of Pleistocene mammals - mastodon, woodlands bison, and caribou -- were the chief animal species, as well as mammoth, horse, moose, elk and others.

Big-game hunting is often proposed as the typical way of life for Paleo-Indian groups but this suggestion should be considered tentative. No direct association of large Pleistocene animals with Paleo-Indian remains is known in Pennsylvania and it seems likely that a variety of small game animals and edible plants formed an important part of the diet. The Paleo-Indian settlers of Pennsylvania probably lived a life resembling that of recent Eskimo groups with a somewhat greater use of plant foods. The typical fluted spearpoints found on Paleo-Indian sites would have been well-suited to big-game hunting.

The annual cycle of subsistence and settlement would have been adjusted to the local distribution and availability of both animal and plant foods and raw material for stone tools. The mobile way of life proposed for Paleo-Indian groups has an important archaeological consequence. Occupation of any one site would have been of short duration except at certain favored locations (e.g. Meadowcroft rockshelter, Shoop). The typical Paleo-Indian site consists of one or more of the characteristic fluted points and associated stone debris from the manufacture of tools. Traces of other, perishable, materials which may have been important are not found. In general, few Paleo-Indian sites are known.

4.2.2 Archaic Period

With the end of the Pleistocene and the retreat of the glaciers a new climate and vegetation were established over much of North America. In Pennsylvania and elsewhere temperatures became milder and a new variety of plants and animals replaced the earlier cold-adapted species. This changed landscape and range of food sources encouraged the development of a new pattern of settlement and subsistence ca. 9000-8000 B.C. typical of the Archaic period.

The pattern of settlement noted for this period reflects several considerations: a more uniformly distributed and varied food supply and a related change in subsistence activities and scheduling. Late Pleistocene animal species were replaced by deer, elk, bear, turkey, and other species typical of the modern deciduous forests of Pennsylvania. The evidence suggests a shift from big-game hunting and group movements adapted to game animal migrations to the hunting of new species and the gathering of new plant foods. This shift can be seen in the archaeological record in the appearance of new projectile point types suited to the hunting of small animals and stone grinding tools for the processing of plant foods. Group movements were adjusted to the more uniform distribution of food resources. The general pattern noted for the Archaic is one of seasonal movement by hunter-gatherer groups through a series of base camps and special-purpose (hunting, butchering, quarry, etc.) camps. This pattern, characteristic of recent hunter-gatherers known to ethnographers, persisted with slight change through most of the Archaic.

Toward the end of this period a shift to greater sedentism and population growth is apparent. Base camps become larger, sites of all types become more numerous, and a new emphasis was placed on collected plant foods. Associated with the larger and more stable populations is the development of mortuary ceremonialism, the expansion of trade or exchange (in copper, for instance), and the elaboration of status distinctions (as seen in burials and burial goods). All these trends continued in the succeeding Transitional and Woodland periods.

4.2.3 Transitional Period

The Transitional period is defined archaeologically by the appearance of new projectile point types, the use of steatite for bowls and cooking vessels, a greater reliance on aquatic foods, and the almost exclusive use of rhyolite for stone tools. These archaeological features point to some distinctive changes in the way of life of Pennsylvania's inhabitants during the second millennium B.C. (ca. 1800-1000 B.C.).

Greater mobility, possibly related to the use of canoes on rivers and streams and the use of a wider variety of plant and animal foods (e.g. fish and molluscs) are two important aspects of the Transitional adaptation. The use of steatite and rhyolite, obtained from a limited number of special sources at some distance, for stone tools and vessels suggests a well-developed pattern of exchange and transportation of raw materials. In general, the Transitional patterns continues and elaborates the Late Archaic trends to larger populations, sedentism, technological variety, and larger exchange networks.

4.2.4 The Woodland Period

The Woodland period, beginning around 1000 B.C., is marked by the development of settled agricultural life, although the first substantial evidence of plant domestication and cultivation does not appear until relatively late and the growth of agriculture must be viewed as a gradual, long-term process. Associated with the increased use of plant foods was the widespread adoption of pottery vessels. The Woodland period was first defined archaeological by the appearance of pottery although it now seems likely that pottery preceded the use of domesticated plants.

The development of agriculture and the resulting stable food supply were related to the growth of larger populations settled year-round in villages. Population growth and increasing sedentism are trends noted for the previous Archaic and Transitional periods. The Woodland pattern simply continues these trends with the addition of a domesticated plant food supply.

Profound changes -- biological, social, and economic -- were associated with these development:

A number of biological effects can be predicted in these conditions. With increasing population size and clustering, certain characteristic diseases, such as tuberculosis, appear. Changes in the nutritional level affected the stature and health of Woodland period populations. Such changes are apparent in skeletal remains.

Problems of communal resource allocation, planning, and decision-making favored the elaboration of status distinctions already noted in previous periods. These changes appear archaeologically in burial ceremonialism: differences in burial customs and grave goods between members of a group. Trade items from distant sources appear in some graves, suggesting status differences. Widespread burial ceremonial patterns and practices were relected in the occurence of Adena and Hopewell traits, originating in the cultures of the midwest, in the Early and Middle Woodland period sites of Pennsylvania.

Trade in exotic stones, copper, shells, and other materials is evident in the greater variety of material items found on Woodland period sites. The exact nature of this trade or exchange is unclear but it was sufficiently well-organized to move goods, like the copper and shell, thousands of miles.

In the Late Woodland period, beginning around or before A.D. 1000, village life based primarily on maize agriculture became well-established throughout Pennsylvania. Despite this common agricultural way of life, a variety of regional cultural differences are apparent in archaeological sites of this period. Groups in the western portion of the state belonging to the so-called Monongahela Culture, shared aspects of material culture with the Mississippian cultures of the midwestern U.S. Other groups in the central and eastern parts of the state, representative of the Clemson's Island and Shenk's Ferry cultures, preceded the historically known Susquehannocks who occupied much of central Pennsylvania when first encountered by Europeans in the early 17th century.

Larger populations at this time also favored substantial and permanent settlements on river floodplains, close to large areas of fertile land and a diversity of resources: water, plant and animal foods, and the raw material for the manufacture of tools, weapons, and household items. This way of life left traces in the material remains of Late Woodland groups. Pottery became common, supplementing stone vessels, basketry, and animal skin containers. The abundance of small triangular projectile points of flint and other high-quality stone suggests the use of the bow and arrow as a weapon in hunting and warfare.

Conflict between groups seems to be associated with and related to the expanding populations and the consequent demands on resources. Warfare is suggested by the widespread appearance of fortified villages and by references from the early historic period. The conditions created by contact with European culture seems to have increased the level of conflict between aboriginal groups.

4.2.5 Contact/Historical Period

The first contact between Pennsylvania's aboriginal inhabitants and Europeans ca. 1600 led to a series of dramatic changes in native cultures and eventually to their extinction and replacement by the European culture which persists to this day. As noted, established patterns of trade and conflict were greatly affected by the economic and political concerns of the early European settlers who reached Pennsylvania in the 17th century. The result was a succession of wars and group movements which led to the founding of a European culture in Pennsylvania.

The primary effects of European contact were (see Volume II, Section 2.2.5): (1) depopulation, primarily due to disease; (2) an increase in group conflict caused by competition for European trade; and (3) an increased dependence of native groups on European goods and technology.

Europeans encountered existing indigenous political and economic institutions and patterns. The League of the Iroquois grew in the 17th century by a program of systematic warfare, diplomacy, and political consolidation and became the dominant political and economic force in the Northeast. The primary purpose of Iroquois expansion was the control of trade with Europeans. Surrounding groups were conquered, assimilated, or pushed out of their territories as the Iroquois confederacy expanded.

With the growth of European trade and settlement in the 17th and 18th centuries, the dominance of the Iroquois and other native groups declined and these groups eventually disappeared by conquest or assimilation. The subsequent history of Pennsylvania is the produce of exclusively European colonial political and economic forces. This change is reflected in the archaeological record in the gradual replacement of native items by European settlements and associated sites.

The two centuries following the decline of aboriginal culture in Pennsylvania were a period of rapid change resulting from a complex interplay of American and European historical factors. These changes are evident in archaeological sites of a wide variety: forts, colonial and later towns and cities, industrial sites, canals, railroads, and associated sites. Archaeology provides important information on material culture, social relations, and economic patterns complementing that found in the histories of the period.

4.3 A Summary of Major Existing Threats to Archaeological Properties

The major activities affecting archaeological resources can be summarized under a few headings, as follows:

4.3.1 Population Growth and Associated Development

The relation of population concentration to disturbance of archaeological sites is fairly obvious. The growth of cities has entailed the loss or disturbance of a vast number of historic and archaeological resources. Population growth in both cities and rural or suburban areas has indirectly, through associated development and maintenance activities, contributed heavily to the actual or threatened destruction of archaeological sites. Although population growth and related activities affect archaeological resources in all areas, the greatest future impact will be on resources in those areas with a formerly low population density but a rapidly increasing population. These are the suburban and rural areas where population change (increase) is highest, resulting in the settlement of previously uninhabited land or areas of low settlement density.

In these areas, the activities which usually accompany new or expanding settlements have an important effect on archaeological sites, particularly since areas chosen for settlement today are selected for many of the same reasons they were selected by earlier prehistoric and historic populations. Level, well-drained, productive land with access to a variety of resources and environments situated along routes of communication and transport are attractive for habitation now as they were 10,000 years ago. It is thus predictable that changes in the distribution of population will affect those areas with a high potential for archaeological sites.

The diverse associated activities have a varied impact on archaeological resources, with extensive land-moving activities representing a greater threat than the provision of secondary support or maintenance facilities. The major activities in this category are as follows:

1) the building of new homes, businesses and public buildings, particularly housing subdivisions and industrial or commercial "parks", which involve extensive land alteration and disturbance.

2) the construction of roads to service these new population centers, both major arteries and local or access roads.

3) the construction of support facilities: sewers, water treatment plants, transmission lines, substations.

4) recreational use of nearby natural areas: changes in population distribution affect the use of surrounding recreational land.

Activities in the above categories come under federal or state-mandated review to varying degrees. Only those activities funded, licensed, or assisted by the federal or state government or on public lands are subject to government preservation regulations. Thus construction in category (1) above is reviewed only if it comes under the control of HUD or other federal agency or occurs on public lands. Privately-financed projects on private lands are not so protected. Category (2) activities are subject to state and/or federal review if Pennsylvania DOT or FHWA funds are used. Procedures for the review of federally-assisted projects to construct waste-water treatment facilities and power transmission lines [category (3)] are well-established and effective as is evident in the number of reports on these projects filed with the BHP.

Changes in these categories of impact on archaeological resources can be predicted by the magnitude and pattern of changes in population. This approach, the use of projected population changes by area, can be used (cf. Downer et al. 1980) to predict the general pattern of future impacts on archaeological resources. An analysis of population change and the predicted effects on archaeological resources are presented in Volume II.

4.3.2 Highway Construction, Expansion, and Maintenance

The construction of interstate highways initiated during the 1950's by the federal and state governments under the provisions of the Federal Aid Highway Act of 1956 has had a substantial effect on archaeological resources. In Pennsylvania, the Pennsylvania Department of Transportation has overseen the construction of hundreds of miles of interstate highways and connectors. Although this program is now nearing completion, additions and modifications to the interstate system will continue to affect archaeological sites. The Department of Transportation also funds and assists the construction and maintenance of state and local roads.

Both of these activities have an effect on archaeological sites, since sites are often located in the same areas selected as favorable for highways: stream margins, floodplains, and first terraces: in general, areas of level or rolling relief. The nature of highway construction - the disturbance of a continuous, relatively narrow, corridor over a long distance - means that it creates a transect of areas attractive to human settlement. Thus highway construction tends to affect a great variety of archaeological sites to a greater degree than many other construction activities.

On the other hand, the area of primary (direct) impact is narrow, restricted to the path of highway and adjacent land. This allows a fairly exact estimate of the impact of construction on archaeological sites. Sewers, pipelines, etc. have a similar character and effect. Secondary effects, resulting from the movement of heavy equipment, the provision of access roads, and changes in traffic patterns in the vicinity should be considered when judging the impact of the project on archaeological resources, although in practice they rarely are.

Further, the creation of a transect of varied environments by a highway may be advantageous from an archaeological point of view in a survey of the region crossed by a proposed highway. The transect may effectively sample a range of environments in a region. If incorporated in a coherent research proposal the archaeological survey required for a highway project can produce valuable archaeological information while satisfying preservation laws. However, this requires the involvement of both the DOT and the PHMC in insuring that a scientifically valid research strategy is developed for highway and similar survey projects. Such a research strategy would incorporate regional environmental information, knowledge of local culture history, and the research problems and priorities contained in the study unit summaries in this plans (see Volume II) to produce an archaeological investigation integrated with other research in the region and the state.

Disturbance of archaeological resources results not only from major new road construction but from maintenance and modifications to existing roads. In certain environments, such as narrow floodplains in deeply dissected hilly regions, even a slight realignment of a roadway may affect previously unconsidered resources. This implies that all highway construction and modification projects should receive careful attention. The impact on archaeological resources is a function of the particular local conditions as well as the type of land-use activity.

Not only roads but associated construction of bridges, ramps, and tunnels and activities such as the clearing and grading of adjacent property can produce both primary and secondary (see Chapter 3) impacts on archaeological sites. It is important that the PHMC be provided with complete information on the project to allow it to judge primary and secondary effects resulting from associated activities and changed patterns of land use.

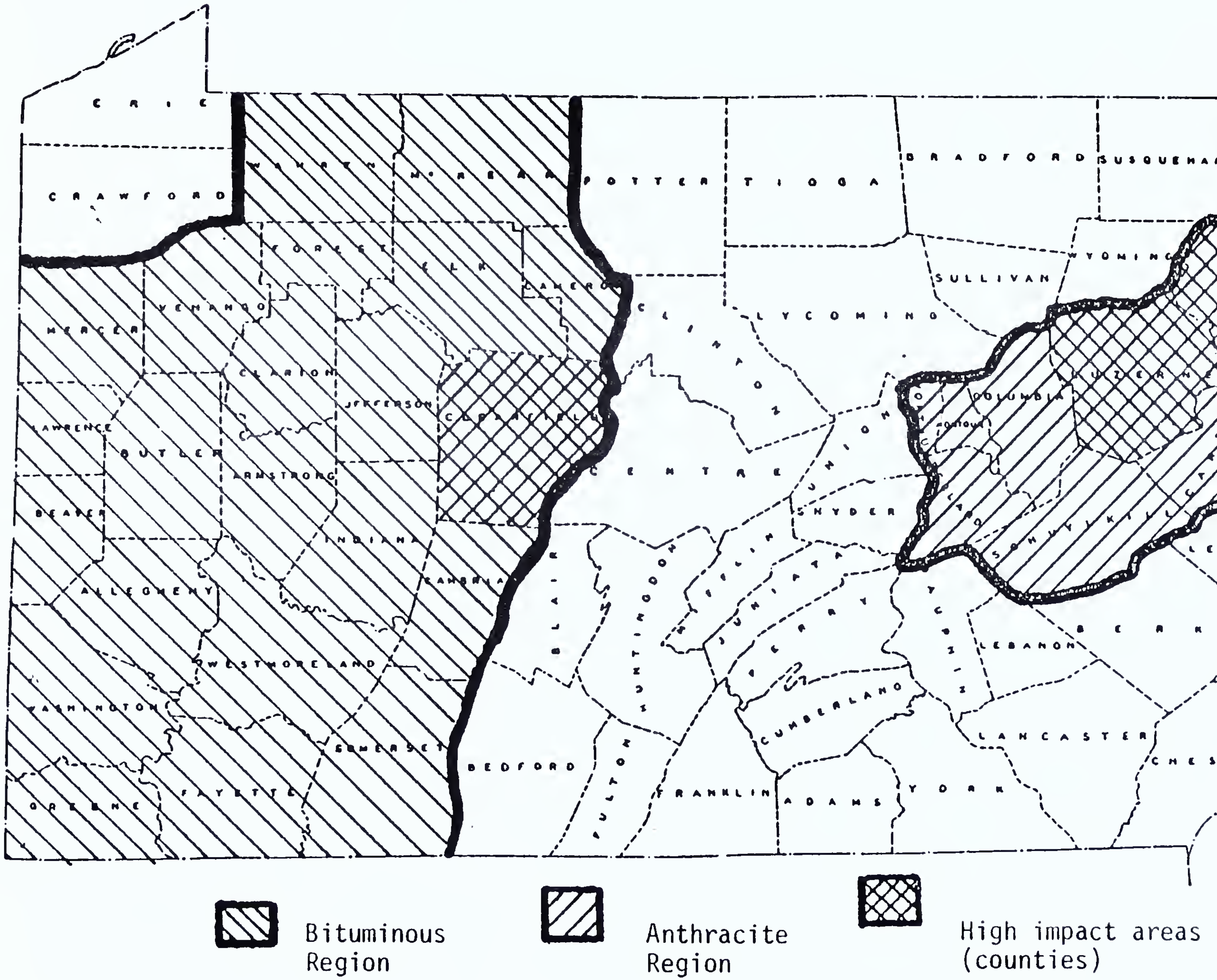
Given the nearing completion of major interstate and state highway projects, it is predictable that much of the future threat to archaeological sites will result from smaller-scale highway modification and maintenance programs. The nature of the threat is changing but the threat remains real.

4.3.3 Surface Mining

One of the greatest immediate and long-term threats to archaeological resources derives from the surface mining of minerals (primarily the extraction of bituminous coal but including peat, sand, gravel, limestone and other stone, and clay). It is the surface stripping and removal of coal that now most threatens sites and will continue to do so in the foreseeable future, as long as the demand for coal remains high and as long as surface mining remains economically attractive. The Environmental Quality Board (1981:44-46) estimates that approximately one-third of the state is underlain by coal reserves and that about two million acres of prime agricultural land overlie the western coal reserves. More than 85% of the state's game lands are within coal regions (see Figure 4.1). These areas of high productivity and diversity are also areas where archaeological sites are likely to be found. Thus future surface mining

Figure 4.1

Mining Areas



Source: PA. DER 1976

will have a major effect on precisely those areas with a high potential for archaeological information.

The nature of surface mining, involving the extensive disturbance of the land surface, makes it particularly destructive to archaeological sites. The indiscriminate removal of earth over a large area is almost certain to destroy archaeological evidence in many areas of Pennsylvania. As is apparent from Figure 4.1 the protection of archaeological resources in Study Unit III (The Western Appalachian Plateau) (see Volume II) is concerned primarily with mitigation of the effects of mineral exploitation.

An additional problem with the control of surface mining in Pennsylvania is the presence of many small operators. The practical difficulty of monitoring their activities, including the effect of their operations on archaeological sites, is immense. The monitoring duties are beyond the capabilities of either the DER or PHMC and would be an appropriate task for amateur archaeologists or local environmental protection groups. A similar situation exists in states such as Ohio, Indiana, and Kentucky, creating problems very different from those states (e.g. Texas) where almost all surface mining is in the hands of a few large companies. The large mining interests have generally recognized the advantages of a long-term and uniform policy of cooperation with state historic preservation offices and frequently fund regional survey programs or hire archaeologists to satisfy their preservation responsibilities. Small operators, on the other hand, are less able to shoulder the economic and organizational burden or archaeological surveys and, in the absence of strong enforcement efforts, have resisted preservation agencies and refused to cooperate in identifying or protecting sites.

The existing laws and regulations provide for the protection of cultural resources on a case by case basis during the mining permit application process and in declaring areas unsuitable for mining. To comply with federal regulations, those developed by DER must provide means for protecting archaeological and historical sites threatened by surface mining. Two major alternative approaches exist:

The most promising method of regulating mining threats to sites is through the review of surface mining permit applications. DER is required, under the proposed regulations, to inform the public and other Commonwealth agencies of permit applications it receives. Agencies, including the PHMC, have 30 days after publication of the permit applications in the Pennsylvania Register to respond with objections to the issuance of a permit. Objections may be made if the BHP feels that permitted surface mining would violate the provisions of any section (especially 86.37) of the proposed regulations protecting public parks and National Register sites.

Objections may also be made after the issuance of a permit by DER if the objector can establish that significant new information has come to light that would affect a judgement on the suitability of an area for surface mining. However, this approach is essentially a measure of last resort and should not be considered a substitute for establishing satisfactory regular relations and procedures.

The second approach is the "522 process" (Section 522 of the Surface Mining Control and Reclamation Act of 1977) whereby areas may be declared unsuitable for mining for a variety of reasons including a threat to significant historic or archaeological resources (see Pa. Dept. of Environmental Resources, n.d.). This process provides for the protection of sites in advance of permit issuance: surface mining may be stopped before or during an application for a permit. The "522 process" requires that a petition to declare lands unsuitable for surface mining be submitted with supporting documentation to DER. The petition then goes through a round of review, hearings, public comment and evaluation that may take nearly a year. (Figure 4.2). This petition process applies only to known sites and the petitioner (the BHP or any other interested party) must provide sufficient evidence to document a certain or highly probable adverse effect on significant resources. The efficiency of this approach is unclear at present. Several petitions have been submitted by the BHP to DER but it is still too soon to judge their effect. The petition may help to delay mining that threatens archaeological sites, regardless of its eventual success or failure. For this reason, the "522 process" may be an appropriate approach in certain urgent cases where known sites are threatened with imminent destruction. Whether successful or not, the delay caused to mining operations may be sufficient to allow alternative protective arrangements to be developed.

Both these approaches suffer from an inability to integrate the monitoring of surface mining operations into a program of cultural resource management. They are procedures for dealing with individual cases. A coherent and integrated program would involve regional surveys of surface mining regions in advance of mining and permit applications. The surveys would be planned to produce information which would contribute to the general understanding of regional cultural processes and could be included in the revised study unit summaries. The survey data would be used to create a series of predictive models of site location which could be used by mining companies, archaeologists, and planners to direct their respective activities. The regional survey and predictive modeling program would provide archaeologists with valuable settlement information, enable planners and mining operators to plan future mining and other development efficiently be avoiding conflicts with environmental values, and provide preservationists with a more complete inventory and map of cultural resources. The advantages are clearly general.

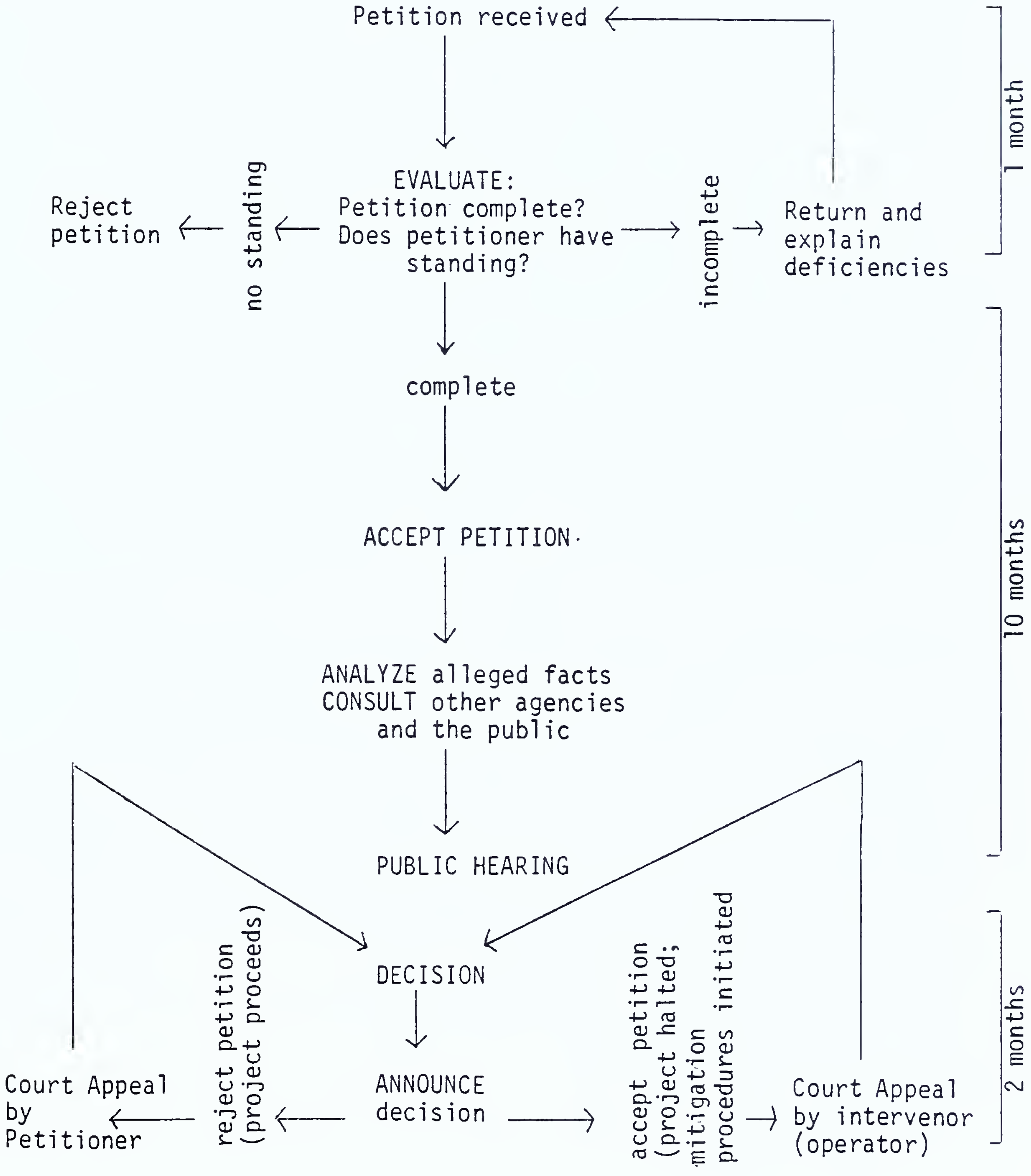
The difficulties with the successful balancing of the various interests involved come under three headings. First, the PHMC has failed, until recently, to devote sufficient attention to public education and alerting the public to the nature of the threats to cultural resources. Although the legal mandate exists, in both federal and state law, for an active role for the PHMC in the monitoring of surface mining, the failure to issue regulations implementing the provisions of the Pennsylvania Historic Preservation Act (see Appendix C for details) with regard to the review of Commonwealth agency activities affecting archaeological resources has made the responsibilities of the PHMC vague and its response to mining effects uncertain.

Second, the Department of Environmental Resources (DER) has failed to recognize historic or cultural resources as one of the environmental

Figure 4.2

"522 Process"

PROCEDURES FOR DESIGNATING AREAS UNSUITABLE FOR SURFACE MINING


Petition received
EVALUATE:
Petition complete?
Does petitioner have standing?
no standing
Reject petition
incomplete
Return and explain deficiencies
complete
ACCEPT PETITION
ANALYZE alleged facts
CONSULT other agencies and the public
PUBLIC HEARING
DECISION
ANNOUNCE decision
reject petition (project proceeds)
Court Appeal by Petitioner
accept petition (project halted; mitigation procedures initiated
Court Appeal by intervenor (operator)
1 month
10 months
2 months

values for which they have a responsibility under the provisions of the Pennsylvania Constitution and Act 275 of the General Assembly (1970) as well as federal legislation (NEPA, 1969). Current efforts by the PHMC and DER to reach a compromise, embodied in a Memorandum of Understanding (April 1982), offer some hope for an effective resolution of the conflicting interests involved.

The third source of confusion has been the failure of the federal government, particularly the ACHP and OSM, to take a strong and clear position on surface mining effects on preservation. The responsibility for this situation lies largely with the federal government, which has determined that Section 106 of the NHPA does not apply to mining, so that no survey can be required in advance of land modification, although surface mining is a licensed activity with a potential effect on cultural resources. In November 1980 the Advisory Council on Historic Preservation (ACHP) and OSM signed a Memorandum of Agreement (MOA), attempting to define responsibilities for the identification of cultural resources and the mitigation of impacts from surface mining ("Programmatic Memorandum of Agreement between the Advisory Council on Historic Preservation, the National Council of State Historic Preservation Officers and the Office of Surface Mining", November 6, 1980). However, continued disagreement between ACHP and OSM on the protection afforded to National Register-eligible sites, the uncertainty introduced by the change of administration, and the policies of the new administration led to the repudiation of the MOA by OSM. This action leaves federal policy on surface mining and cultural resources very unclear. There is at present no clear legal basis for requiring archaeological surveys to be performed before mining, either under Section 106 or under any other federal regulation. Some state historic preservation offices have been successful in obtaining surveys to identify cultural resources before surface mining, but this has been the result of individual instances of cooperation between agencies and mine operators and not of federal policy.

In order to achieve "primacy" in the control of surface mining in the Commonwealth, DER must develop regulations consistent with those of the federal Office of Surface Mining. To comply with federal regulations, those developed by DER must provide means for protecting archaeological and historic sites threatened by surface mining. When a satisfactory "primary package" is submitted to OSM and approved, DER will receive most of the regulatory powers previously held by OSM. At the moment, this transfer of power is continuing and the adequacy of the regulations issued by DER is still uncertain. The outcome is made less certain by the failure of the federal government to agree on and demand a strong preservation policy for surface mining. The adequacy of protective measures depends on the arrangements now being worked out by individual states.

4.3.4 Dam Construction and Flood Control Projects

These projects, generally under the control of the U.S. Army Corps of Engineers or federal Soil Conservation Service (SCS), have a major effect on cultural resources but are, fortunately, subject to strict regulations (the Corps has issued its own regulations for the protection of cultural resources: 33 CFR 305, as has the SCS: 7 CFR 656). Although relatively few in number - the BHP files record just over 30 in the last ten years - they have an important effect because of their location and areal extent. The stream margins, floodplains, and low elevations primarily affected by water control projects are among the most attractive areas for settlement and the most likely to contain archaeological sites (cf. Hatch and Hay 1980, Hay 1981 for models of site location in central Pennsylvania, for examples). In some large Corps projects, (Blue Marsh Lake, for example: 6,000 acres), several hundred or thousand acres are permanently or periodically inundated. Although inundation may not immediately destroy sites, it removes them from research in the foreseeable future and may eventually destroy or alter valuable archaeological information (King, Hickman, Berg 1977: 121-128; Shiffer and Gumerman 1977: 291-343).

Although destructive, these projects can be used to advantage by archaeologists. The large area involved and the stream and floodplain focus can provide an opportunity to apply a regional research strategy aimed at recovering settlement and subsistence data on a coherent (drainage system) settlement system. As with any other research strategy, the success of this type of project in answering significant research questions depends on integrating its results into a regional or statewide program of survey. The Blue Marsh Lake project, which produced important information on Archaic period adaptations in the Great Valley, is an example of a successful research program using a Corps reservoir project (Snethcamp, Ebright, and Serena 1981).

Although the future effect of flood control projects is less predictable than that of population-growth or highway construction, the long planning periods necessary for these projects and the degree of cooperation from the Corps and other agencies in the past encourage a hope that future flood control activities and the archaeological investigations they require can be successfully integrated into a regional research design.

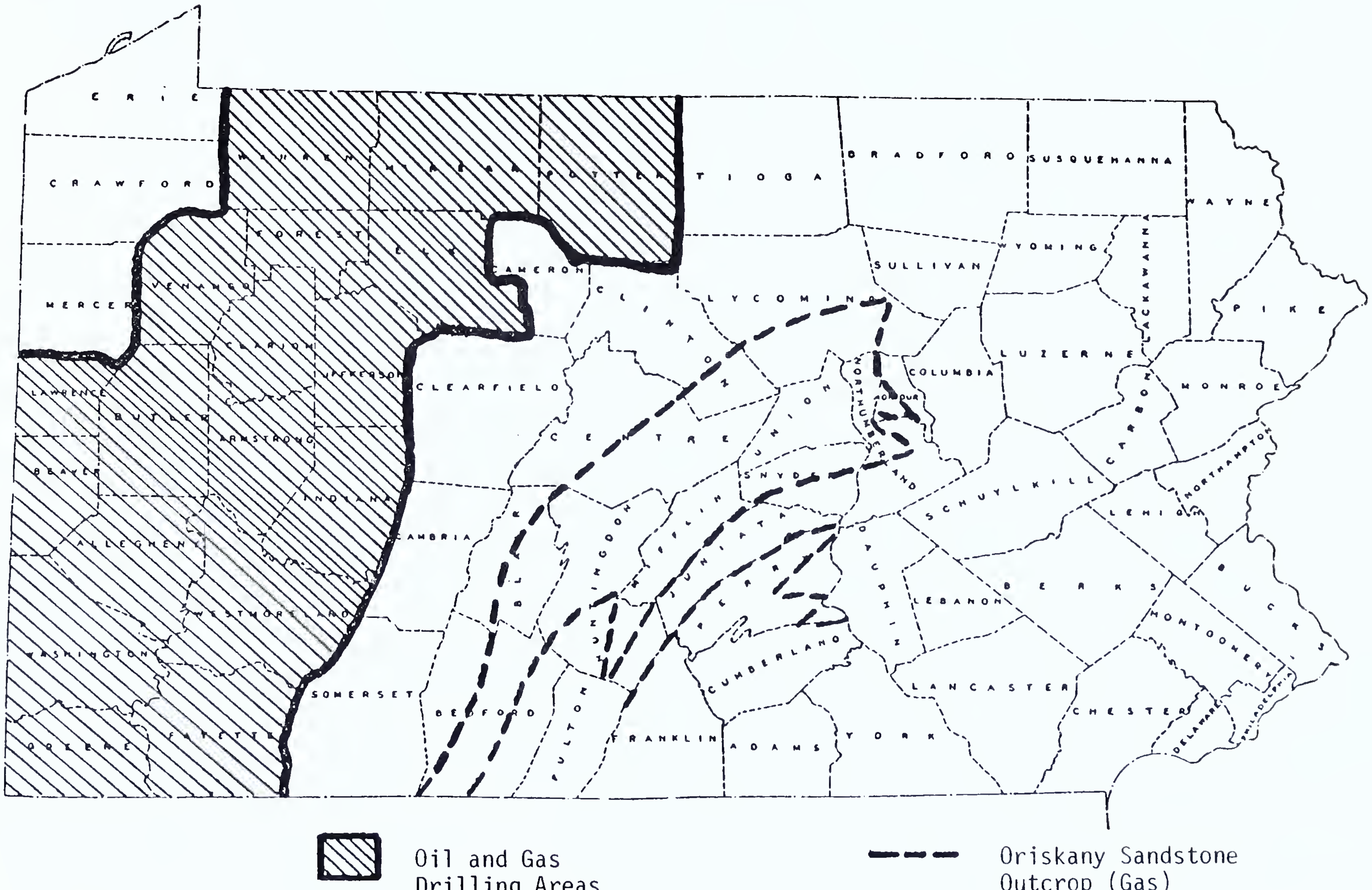
4.3.5 Gas and Oil Drilling

By far the greatest amount of gas and oil well drilling occurs in the western part of the Commonwealth (see Figure 4.3). Over 100,000 abandoned wells in Pennsylvania attest to the amount of previous drilling. Gas and oil exploration and drilling are continuing at an ever greater rate throughout western and central Pennsylvania (Environmental Quality Board 1981: 50-51). More gas wells are now being drilled in Indiana County than in any other county in the continental U.S.

Gas well drilling has a greater effect on cultural resources than might at first be suspected. Cowin (1980) estimates that each new well in western Pennsylvania disturbs about 2 acres of land. The impact of drilling extends beyond the few square meters occupied by the well. Land leveling, drainage pond and ditch construction, roads and access to the drilling site by heavy equipment may destroy sites not directly affected by the well drilling. Cowin reports seeing sites completely destroyed within a few days by the leveling and earth-moving associated with drainage pond construction and by the movement of large equipment in and out of the area.

Figure 4.3

Oil/Gas Drilling Areas



Source: PA. DER 1980

No control can be exercised over the threat to archaeological (or other environmental) resources in the absence of requirements, adequately enforced, for permits and permit application review by the PHMC. Only gas wells on public lands are subject to control and permit review. The BHP reviews permit applications for wells in the Allegheny National Forest but exercises no other control over the destruction of archaeological sites during drilling and exploration. Clearly, the PHMC (and other agencies and groups concerned with the protection of water, soil, plants, and animals) should be seeking regulations and a more active role in monitoring the effects of gas well drilling. As Cowin (1980) notes, in many cases the preservation efforts of one agency -- such as the Army Corps' efforts to identify and protect sites at the Mahoning reservoir -- are being negated by the effect of unregulated drilling in the same area.

Geological constraints suggest that future gas and oil exploitation will occur in the same areas currently the focus of attention. The rate of well-drilling can be expected to increase, given the projected fuel needs, in the near future. Thus, the cumulative effect of unregulated and unmonitored drilling will come to represent a major threat to archaeological resources, rivaling surface coal mining in its destructiveness. Urgent action by the PHMC, PAC, and concerned members of the archaeological community is necessary.

4.3.6 Timbering

The impact of timber cutting and associated activities on archaeological sites in Pennsylvania is real but poorly known at present. Most of the current timbering operations reviewed by the BHP occur in the Allegheny National Forest in Warren, McKean, Forest, and Elk counties. Areas of potential impacts are roughly outlined in Figure 4.4 - the regions of heavy forest cover in Pennsylvania, primarily in the Allegheny Plateau, Ridge and Valley Province, Laurel Highlands, and Poconos.

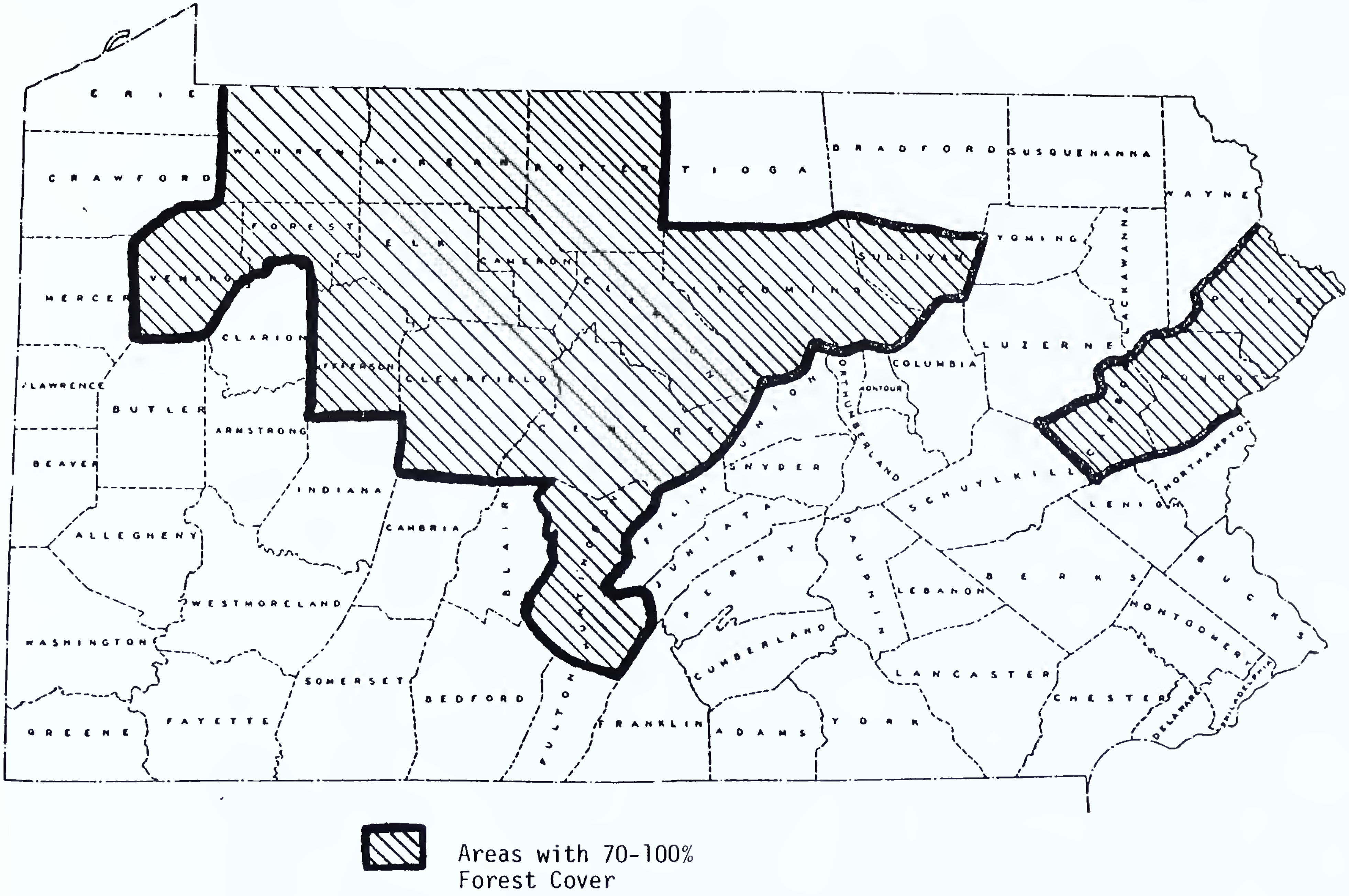
The Bureau for Historic Preservation, in cooperation with the National Forest archaeologist, regularly reviews timbering permits in the Allegheny National Forest but very few sites are found to be affected by these activities. This is probably the result of several factors: 1) the nature and distribution of sites in this region, 2) the difficulty of identifying sites in heavily forested areas, and 3) the limitations of staff and time available to survey large tracts (much of the work is now done by para-professionals with varying degrees of skill). No control is exercised over timbering on lands not controlled by the federal government or the Commonwealth.

This amounts to 12.4 million acres of the approximately 15.9 million acres of commercial forest land in Pennsylvania. Of the remaining 3.5 million acres, 2.8 million acres are state-owned, 0.5 million acres are federally-owned, and 0.2 million acres are owned by counties and municipalities (DER 1981:39).

A projected increase in demand for timber and timber products of over 50% in the next twenty years threatens to greatly alter the present level of effects on archaeological sites. Not only the disturbance of the

Figure 4.4

Timber Areas



Source: PA. DER, 1981

ground during the removal of trees but the secondary effects -- the movement of heavy equipment, construction of access roads, etc. -- can be expected to increase in the near future. With effective control exercised only over federal or Commonwealth-controlled lands, it is important that the archaeological community and the PHMC develop plans for surveys of large areas of forested land. Such plans should include efforts to map and record sites, develop predictive models for site locations in those areas of the uplands where much of the forest cover is concentrated, and attempts to recover, during mapping and surface collection, that information which can be recovered from the hunting camps and work sites typical of these upland locations, with the expectation that a complete program of excavation or preservation will not be possible in many of the privately-owned timbered areas. The BHP has recently developed, in conjunction with the Bureau of Forestry, Department of Environmental Resources, a comprehensive procedure for the review of forest clearance projects. This agreement will answer much of the need for large-scale survey defined above.

4.3.7 Agricultural Techniques

The effect of plowing and other agricultural practices on archaeological sites has received increased attention in recent years. This concern is reflected in a number of recent journal articles and monographs reporting both experimental and theoretical investigations of the effects of natural and human agencies on the distribution and interpretation of archaeological materials. Some generalizations are possible.

Traditional plowing techniques, affecting only the upper topsoil level, tend to simply displace archaeological materials by a limited and predictable amount. Such plowing generally leaves intact the subsurface features of a site and preserves the relative position of surface artifacts and features at the site, thus preserving the overall integrity of the site. Surface artifacts remain in association with subsurface features, thereby facilitating the identification of sites by surface inspection.

Plowing often greatly aids archaeologists in identifying sites by surface indications. Surface survey is made easier when ground cover is removed and the surface is made visible by plowing. Plowing also acts to bring artifacts to the surface and thus help in the identification of archaeological sites.

Recent development and changes in technique may threaten archaeological sites, however. Deep plowing affects previously untouched subsurface archaeological features and artifacts and destroys the integrity of a site by changing the context of archaeological materials.

There is no obvious solution to this problem. It seems likely that many relatively shallow sites will be destroyed in advance of any archaeological work. In cases where sites are known to exist, individual arrangements with farmers may prevent the destruction of such sites. In general, only a program of regional survey and predictive modeling of site location will help to identify potential site locations and allow preventive measures to be taken.

4.3.8 Vandalism and Uncontrolled Excavation

A problem of long standing but of increasing urgency in recent years is the deliberate, sometimes malicious, disturbance or uncontrolled excavation of archaeological sites. This includes both deliberate acts of vandalism -- the theft and disturbance of archaeological remains by relic-hunters and others -- and the actions of perhaps well-intentioned but untrained or inadequately trained "amateurs".

As has been repeatedly stressed, here and elsewhere, archaeological remains and fragile are non-renewable resources which have scientific value only when the context of their deposition can be established by systematic survey and excavation. Only in this manner can the associations of archaeological materials in the ground be discovered. Scientific excavation implies the systematic identification and recovery of archaeological evidence as it occurs in the ground, its careful removal to preserve the context of artifacts and site features, and the planned study and curation of the material removed. Any other approach to archaeological work -- the collection of surface artifacts, the haphazard excavation of chance finds, etc. -- results in the loss of virtually all the scientific value of the site and its contents.

Archaeological sites must be protected both from vandalism and from the equally destructive efforts, however well-intentioned, of untrained and uncontrolled collectors and "amateurs". There are two approaches to this problem: 1) the enforcement of existing preservation and antiquities laws, and 2) the education of the public.

Existing laws provide only partial protection for archaeological resources at best. Protection to resources on public land, both federal and Commonwealth, is provided by law (e.g. the Antiquities Act of 1906 and subsequent federal statutes, the Pennsylvania Historic Preservation Act, etc.; see Appendix A). To date, however, only one case of unauthorized excavation on public lands in Pennsylvania has been brought to court. The PHMC exercises almost no control over archaeological resources on private land. The protection of these resources depends on the awareness of preservation concerns of individual land owners.

Education is clearly the best defense against this threat to archaeological resources. At least some land owners, if informed of the potential for destruction, might be prepared to take action against collectors and uncontrolled excavation. There is a role in this regard for the local chapters of the SPA. Education efforts aimed at untrained collectors and amateurs might have the greatest potential for preventing the destruction of archaeological sites. A combined effort by the SPA and the PHMC could serve the mutual interests of both groups by enlarging the body of trained amateurs sensitive to preservation concerns and increasing general public awareness of the problem.

4.4 Impacts on Historic and Urban Archaeological Resources

Although frequently treated as a special case, historic period and urban archaeological resources are, in any comprehensive view of modern archaeology, to be treated within the same theoretical and methodological framework as any other sites. The tendency to consider these resources separately obscures the nature of the information which could potentially be recovered from such sites. Details of the methodology and the particular threats to these resources may differ from those characteristics of prehistoric and non-urban sites but the interpretive framework in which they may be considered is identical. Recognition of this common focus for interpretation is reflected in the recent treatment of historic period sites in both Old and New World archaeology.

Historic sites, both urban and rural, may (and should, as noted above) be treated in the same theoretical context as prehistoric sites. The major problem in the conservation of historic archaeological resources has been recognizing their existence and value. They are often ignored by historic preservation efforts concerned with standing historic structures. The simple acknowledgement that standing structures are only one aspect of the historical and archaeological information available would be a major advance, implying that any preservation efforts should involve a consideration of the total context of historic period occupation: standing structures, surface features, and subsurface features. A change in the orientation of preservation efforts is implied: historic structures should be viewed as visible surface components of a total archaeological site or deposit rather than treating subsurface features as secondary aspects of the visible structures.

Urban areas often contain a great range of archaeological sites, both historic and prehistoric. The factors which make an area attractive for settlement in the modern era also influenced settlement there at earlier periods. The threats to these resources are those outlined in Section 4.2.1 with regard to any area of population density and growth, corresponding to the intensity of population density-related land-modifying activities.

Perhaps the greatest problem in urban archaeology is methodological: access to archaeologial resources. Often the questions are how to identify subsurface features and sites in advance of land-modifying activities and how to expose a large enough area to gather a representative sample of material from such sites. Survey and excavation procedures may have to be modified to adequately identify and sample urban sites. In the case of historic period sites, documentation for their location and extent may come from historical written sources. For prehistoric sites, historical sources may help to characterize the pre-modern landscape and aid in applying general predictive models of site location to the urban situation.

Current work in the major urban areas of Pennsylvania -- Philadelphia and Pittsburgh -- demonstrates many of the possibilities and problems with archaeology in an urban setting. One of the major methodological problems with urban work -- the difficulty in obtaining large areal exposure -- can to some degree be offset by a coordinated program of survey and excavation adjusted to the opportunities presented by urban land development. Archaeologists, working in advance of land development with planners and developers, can anticipate and plan for both threats to archaeological resources and opportunities to expand and complete the survey coverage of an urban area.

The following suggestions are general guides to the conservation of archaeological resources in urban areas:

(A) It is important that literature searches be initiated well in advance of construction and even before the planning of major projects. A coordinated program of literature review and mapping of early settlement areas can aid in the identification of potential resources before any planning or work begins. By identifying the archaeological resources or potential of an area in advance of any projects it may be possible to (1) reduce or eliminate the threat to those resources by relocation or realignment of the project, (2) plan for the mitigation of project effects, or (3) plan for on-site monitoring and salvage operations by archaeologists. A literature search program of this type can produce an archaeological map of the city outlining areas of high potential for sites. Such programs have been successfully initiated in Pittsburgh, Philadelphia, Baltimore, Atlanta, and elsewhere.

(B) Establishing a pattern of cooperation with city planning agencies can be of mutual benefit to archaeologists and planners. City planners benefit by including archaeological resources among those factors considered at an early stage in planning urban land development. Archaeologists benefit by planning preservation priorities, anticipating threats to archaeological resources, and avoiding the necessity of last-minute salvage operations.

(C) One aspect of planning for the preservation of archaeological resources in an urban setting is establishing preservation priorities. Even without archaeological testing it should be possible to outline areas of high archaeological potential and, within these areas, to decide on the potential significance of individual resources or resource types. Requirements for adequate preservation differ for various types of resources: different strategies may be appropriate in different situations. The conservation of resources -- that is, the best use of resources -- may demand various forms of avoidance or mitigation: the decision as to be appropriate measures can only be made for particular situations. Planning and the early identification of resources or resource potential can help in setting priorities and developing mitigation procedures.

(D) Despite the best efforts of planners and archaeologists, the nature of urban archaeology is such that unexpected resources are likely to be encountered during construction. Consequently, a need for on-site monitoring can be anticipated. Provisions must be made, in consultations between archaeologists, planners, and construction contractors, for on-site monitoring, the testing and excavation of archaeological material encountered during construction, and adequate mitigation or avoidance procedures. Archaeologists at the site may determine that the resources encountered do not merit more than identification and sampling, or a more extensive salvage operation may be called for. With cooperation between archaeologists and the other parties involved the need for delays in construction work can usually be avoided.

(E) The benefits of a program of publicity and public education should be obvious. Public support for archaeology has been an important factor in the success of programs in Pittsburgh, Philadelphia, and elsewhere. The public, when informed of the meaning of archaeological work, is generally supportive. The high visibility of urban archaeological projects can be of benefit to all concerned. The preservation of the city's cultural heritage -- visible to the public in excavations, restoration, and exhibits of archaeological material -- can become a major attraction for visitors and residents and a public relations success for archaeologists, city officials, and construction firms.

4.5 Underwater Archaeological Resources

Underwater archaeological resources are an important but largely unappreciated part of the Commonwealth's heritage. Although not as obvious as the coastlines of other states (e.g. North Carolina, Florida), Pennsylvania's coasts and streams contain a variety of known or potential historical and archaeological material. Included are the lower reaches of the Delaware in the southeastern coastal zone, the shores of Lake Erie, and the navigable portions of the Susquehanna and Ohio Rivers and their tributaries. These waterways have been the focus of transport, communication, and commerce throughout both the prehistoric and historic periods. A variety of archaeological resources, largely unknown or unrecorded at present, represents the use of these waterways over the past ten millennia.

Four major areas and the known and anticipated archaeological resources they contain may be identified:

(1) The Delaware coastal zone and the upper reaches of the Delaware: resources include the dock and commercial facilities of the historic period, areas of prehistoric use now submerged, ferries and fords of both the historic and prehistoric periods;

(2) The Lake Erie Coastal zone: resources includes shipwrecks off the coast, submerged areas of prehistoric settlement;

(3) The Susquehanna River and major tributaries: resources include evidence of ferries and fords used in both prehistoric and historic period transport;

(4) The Ohio River and major tributaries: resources include evidence of transportation facilities for both the prehistoric and historic periods.

In addition, smaller streams and lakes may contain archaeological evidence similar to that listed in (1) to (4) above.

Several general categories of archaeological data are obtainable from underwater sites. These and the anthropological information which may be derived from them may be summarized as follows:

(1) Ships: information on the technology of ship-building and vessel use; this can be correlated with general economic conditions, patterns of trade, scale of trade, etc.;

(2) Ship cargoes: information on imports, trade patterns and transportation routes, the nature and technology of manufactured items, general economic conditions, population information;

(3) Docks and associated features (warehouses, handling facilities): information on the type and number of imported goods, population size and character, the scale of trade, etc.;

(4) Ferries and fords: data on communication and transportation routes, population size and distribution, and shifts in these patterns;

(5) Shoreline changes: environmental data, patterns of resource exploitation and settlement.

Data from such underwater sites may be used in conjunction with information from terrestrial sites to address archaeological problems of general or regional interest. Information from underwater archaeology can thus be an important component in archaeological knowledge of a region or in models of wider historical or anthropological application.

Underwater resources are particularly fragile and subject to the effects of inadequately planned and monitored development activities, vandalism, or simple carelessness. The removal of underwater historical relics by recreational divers, for example, may unintentionally destroy irreplaceable archaeological evidence. Conservation efforts must address all these dangers to underwater archaeological resources.

Currently, underwater resources are protected only by the same laws protecting other archaeological resources -- that is, by the PHPA and regulations of the PHMC deriving from that law.

Underwater resources not specifically under private ownership are the property of the state and, as such, are protected by those provisions of the PHPA governing archaeological or historical sites on public land. Any recovery or archaeological study of underwater sites or material thus necessitates an application for a permit (see permitting procedures, Appendix H.3). Similarly, any federally or state-assisted project or undertaking which may affect under-water archaeological resources is subject to the same review and compliance procedure as that outlined in Appendix H.2 for other archaeological/historical resources. Questions on this subject should be addressed to the staff of the BHP during the planning stages of any project that might affect underwater archaeological resources and prior to any action, however preliminary.

CHAPTER 5

Management and Policy Recommendations

5.1 The Use of the State Plan

The concerns and priorities listed in Chapter 4 and elsewhere (see the survey priorities suggested in the study unit summaries of Volume II) are simply one aspect of the total responsibility for the planning and management of archaeological resources. The Pennsylvania Historic Preservation Act (Section 5a, Para. 4) specifies that the state plan should include "suggested priorities for the allocation of...resources". Certain areas requiring the attention of the PHMC and all concerned with cultural resource management have been defined in previous chapters. These areas of concern are summarized below.

5.2 Directions in Policy and Planning

The following summary of priorities in Pennsylvania's archaeological preservation program is intended as a guide to those involved in any aspect of Pennsylvania archaeology in formulating long-term goals and policies. It is not an extensive list of priorities or needs and is presented in no particular order of importance. It simply represents the anticipated focus of preservation efforts by the PHMC and others in the near future.

5.2.1 Regulations implementing provisions of the PHPA (see Chapter 3, Appendices A and H)

Regulations are currently being developed by the PHMC to implement the provisions of the PHPA with regard to the following:

a) permits for archaeological investigations on Commonwealth lands: eligibility, application and review procedures, criteria for evaluation, conditions of issuance.

b) Commonwealth agency activities affecting archaeological and historic resources: agencies and individuals involved, activities subject to review, notification and review procedures, survey requests and eligibility criteria, report and survey standards, contractor qualifications, mitigations procedures.

c) easements and regulations on the transfer of archaeological and historical properties.

d) ownership of artifacts collected during archaeological investigations on Commonwealth land or subject to PHMC review.

The authority for regulations on all these subject lies in the 1978 Act and previous legislation. Regulations should help to clarify ambiguities in the current application of these laws and ease relations between the commission and agencies, contractors, and the public on provisions of the law regarding survey and review requirements and the ownership of collections from archaeological investigations, in particular. Draft versions of some of the suggested regulations have been submitted to the PHMC (Raber 1982a) and in revised form, are presented in Appendix H.

5.2.2 Possible archaeological/preservation legislation (see Chapters 1 and 2; Appendices A,F,G,H)

Although secondary in importance to the issuing of regulations, the drafting of an Antiquities Law for Pennsylvania might be a reasonable long-term approach to clarifying several vague provisions of existing laws with regard to the powers of the PHMC. Such an act might establish rules and procedures on the following:

a) ownership of artifacts found during the variety of PHMC-regulated or reviewed archaeological investigations;

b) the curation and disposition of these collections;

c) the treatment, ownership, and disposition of human remains;

d) responsibilities for the conduct and funding of surveys and excavation to determine project effects on archaeological resources.

Suggestions and models for such an Antiquities Act are presented in McGimsey 1972. The length of time involved in developing legislation of this type makes it essential that immediate short-term actions (regulations, MOA's etc.) be taken. The Pennsylvania Archaeological Council and the Society for Pennsylvania Archaeology could take an active role in initiating and sponsoring such legislation.

5.2.3 Cooperation with other Commonwealth agencies (see Chapter 4, Appendix H).

Although procedures for cooperation between Commonwealth agencies and the PHMC are contained in the PHPA (described in Appendices A and H), the nature of certain agency activities makes it reasonable that the Commission establish additional understandings with those agencies. The Memorandum of Agreement signed in 1968 by the PHMC and the Pennsylvania Department of Transportation (Penn DOT) is a model for this type of agreement.

Agencies with activities that affect archaeological resources can be divided into two priority categories based on the extent and severity of the threat represented by their activities. In the high-priority group are the Department of Environmental Resources (DER) and Penn DOT. As explained in Chapter 4 (Sections 4.2.2 and 4.2.3), the effects of surface mining and highway construction and maintenance are of a magnitude and severity to justify immediate concern. Attempts to deal with these agencies through the normal PHPA-mandated review and consultation procedures have varied in success. PHMC relations with these agencies will be improved and review made more efficient and routine when agency-specific agreements are reached, dealing more precisely with the range of effects on resources typical and predictable in their activities (see Raber 1982a for further suggestions in this regard).

A lower-priority category, including the Fish Commission, Game Commission and Department of General Services (DGS), consists of those agencies with particular activities which have a fairly narrowly-defined, predictable and less severe or extensive effect on archaeological sites. The undertakings controlled by these agencies are best dealt with under existing or planned regulations (see above, 5.2.1). Particular situations (e.g. the construction of boat ramps by the Fish Commission) should be addressed through agreements with individual agencies.

5.2.4 Public Education (see Chapters 2 and 3, Appendix E)

It is essential that the Commission continue to emphasize programs to educate the public on the meaning and scope of archaeology and the importance of the preservation of archaeological resources for scientific purposes. The PHMC must satisfy not only its mandated task of education through exhibits, publications, etc., but make a particular effort to explain the purpose of CRM activities, which have become a highly visible aspect of archaeology, dependent on public tax money. The cooperation of contractors, planners, amateurs and professional archaeologists in this effort is essential.

5.2.4.1 Contractor/agency responsibilities

Part of the burden should lie with the agencies and contractors responsible for the assessment, through survey and excavation, of project impacts. Too often the public witnesses the expenditure of public funds for contract archaeological investigations whose results and meaning are never explained. For this reason, the review procedure and research standards outlined in Appendices B and H specify the efforts which agencies and contractors must make to inform the public of archaeological investigations and their significance. The brief summary statement on the work in non-technical language, to be included in the report to the PHMC and make available to the local public, represents a small investment of time and effort considering the large benefit in public education which results.

5.2.4.2 The role of amateur archaeologists

Amateurs can serve as a liaison between the PHMC and the public in educational programs as in other matters (see below, section 5.2.5).

The amateur archaeologist can, through the activities of local SPA chapters, educate the public on the meaning and importance of archaeology. Well-publicized excavations, meetings, lectures, and slide shows can not only strengthen the local organization, but encourage support for the activities of archaeologists at all levels throughout Pennsylvania.

Efforts to coordinate the activities of the PHMC and amateur organization should focus on improved communication, the use of PHMC and other professional archaeologists in local SPA chapter activities (lectures, exhibits, etc.), and the involvement of SPA members by the PHMC in training and intern programs.

The PHMC has made periodic attempts in the past to involve amateurs in intern or certification programs. These have met with a less than enthusiastic response. The problems have included both understaffing and inadequate funding for these programs by the PHMC as well as lack of an organized response by the SPA.

A concerted effort should be made, by both the SPA and PHMC, to establish at least two types of amateur liaison programs:

A certification program could provide amateurs with training in professional archaeological goals, methods, and responsibilities. A program of this sort, funded by the PHMC and local chapters of the SPA, could be administered by the State Museum and educational institutions throughout Pennsylvania. Models for such a program exist in Pennsylvania and other states (summarized in Mogus 1982, cf. section 5.2.4.3).

An intern program could provide valuable experience for both amateurs and students in undergraduate and graduate programs in archaeology. The collections of the Museum are an important resource, under-utilized by the archaeological community at large. Limitations of staff within the PHMC have prohibited a completely adequate organization and use of the collections in archaeology. The use of material from the collections and site files in research or training projects would benefit both the prospective interns and the PHMC. As noted elsewhere (Section 2.5) there is sufficient material in the collections and site files of the Museum to provide data for numerous graduate thesis, undergraduate papers or projects, and training projects for qualified amateurs. The cost would be minimal: funding could come from a number of outside sources as well as from the PHMC budget. The primary requirement is an effort to actively publicize the availability of facilities for this purpose and to encourage educational institutions throughout Pennsylvania and amateur organizations (e.g., SPA chapters) to develop suitable intern projects.

5.2.4.3 Amateur Certification Program

One step in encouraging the involvement of amateurs, SPA members and others, in a variety of archaeological and preservation activities beneficial to the PHMC, professionals, and amateurs, might be the expansion or publicizing of existing certification programs. Certification programs attempt to provide training for amateurs in archaeological research skills and recognition for skills achieved. By this means they acknowledge the important role played by amateurs in encourage amateur involvement of a high quality.

The need for a group of trained and organized amateurs is obvious. They can perform a valuable function in monitoring and preventing the destruction of sites and provide a skilled labor force to aid professional archaeologists in excavation at a time when sources of funding for the conduct of all types of archaeological work seems to be decreasing.

Training programs are offered by 18 states at the present; only 7 of those offer formal certification: Arkansas, Colorado, Louisiana, Massachusetts, New Hampshire, New Mexico, and Pennsylvania (Mogus 1982: 2). The programs include training in field and laboratory procedures but vary in format, amount and ratio of class and field work, sponsorship, professional involvement, and credit granted. For those programs leading to certification, the degree of independence in field work granted to certified amateurs varies, with more or less professional supervision required (Mogus 1982).

Pennsylvania presently has one certification program, co-sponsored by the Westmoreland Archaeological Society, Westmoreland County Community College, and the Carnegie Museum. This program is exceptional, both in the high degree of professional involvement and in offering credit for all work in the program. An average of 30-45 amateurs participate each year, receiving certification on completion of the program (no examination is required) entitling them to perform field work with a fairly high degree of independence, although some direct or indirect professional supervision is required. The designation of certified Field Archaeologist allows the bearer to perform site survey, salvage, and excavation under some form of professional supervision. Information on this program may be obtained from the Commission or from one of the co-sponsoring organizations: the Westmoreland Archaeological Society (SPA Chapter #23), Latrobe, PA 15650 or the Carnegie Museum of Natural History, Section of Man, 4400 Forbes Avenue, Pittsburgh, PA 15213.

The success of this program and the significance of its work should encourage the creation of similar programs in other regions of Pennsylvania. The co-sponsorship by an academic institution and an SPA chapter is a feature of the program worth imitating elsewhere.

5.2.4.4 Publications, exhibits, etc.

The PHMC currently takes an active role in the preparation of books, pamphlets, exhibits, at the State Museum, traveling exhibits and similar educational endeavors. This educational role will be expanded by the addition of several publications dealing specifically with the conservation of archaeological and historic resources. The following publications may prove useful to both the general public and to specific state agencies or others involved in activities affecting archaeological resources:

(1) Publication of the study unit summaries (Volume II) and an accompanying general culture history as a separate volume. This may be of particular value to amateurs and those with an interest in regional history.

(2) A summary of PHMC guidelines and procedures for compliance with federal and state preservation law. This is essentially the material of Chapter 3, Appendices A,B,F,G, and H issued as a separate pamphlet aimed both at agencies with preservation responsibilities and professional archaeologists working as contractors. It includes a synopsis of current preservation law, an explanation of the fundamental problems of evaluating site significance, guidelines and procedures with regard to the responsibilities of agencies and archaeological contractors, standards for archaeological work and reports, criteria for issuing permits for archaeological research, standards for the curation of collections and the treatment of human remains, and procedures for compliance with PHMC regulations.

(3) A periodic bibliography of contract reports received by the PHMC. The number of reports received by the PHMC on Phase I,II, and III work has increased greatly. The dissemination of research results to the professional archaeological community has not kept pace with this expansion in the past few years, however. One step recently taken toward alleviating this problem has been the publication of a list of contract reports submitted to the PHMC in Pennsylvania Archaeological Notes, a joint effort of the PHMC and the Pennsylvania Archaeological Council. In addition, this periodical also presents reports on recent and ongoing contract and other research projects.

(4) A periodically updated list of sites on the National Register and Pennsylvania Inventory.

(5) Information on the procedures by which sites may be listed on the National Register and Pennsylvania Inventory and the criteria for eligibility.

(6) A pamphlet describing the procedures for reporting archaeological sites and the significance of the amateur's role in recording and preserving archaeological information.

5.2.5 PHMC Archaeological Facilities

The PHMC possesses valuable resources in its site files, collections, exhibits, and other facilities. Recent developments and plans promise to increase the value of these facilities to the archaeological community and to agencies and contractors involved in archaeological work. Several areas of concern are addressed by these developments.

5.2.5.1 Site File Computerization

The PHMC is currently in the first stages of the computerization of its site files. This step has become almost essential as the volume of site file information has expanded in recent years. Although limited in scope at present, plans call for full capabilities, including mapping and collections inventory, modelled on the use of computers by other state archaeological programs (Payne and Jones 1981).

Currently, the emphasis is on the entry of site file data, a major task in itself. The system, when in full use, will permit easier access to site file data for both 106 review and general research purposes. A computerized system should encourage the use of the site files as a data source for intern projects, consultation and survey programs.

5.2.5.2 Archaeological Collections

As noted in Appendix G, the curation of collections resulting from archaeological work performed in compliance with preservation law has become a major problem in recent years. The combined load of collections acquired through donations, PHMC projects, and contract projects has already outstripped the capacity of the State Museum's storage and curation facilities. The burden of adequate curation cannot be handled by the PHMC alone. Some responsibility for the curation of archaeological materials must fall on those collecting the materials. This includes both independent academic and professional research and contract work.

Guidelines for the handling of archaeological collections are contained in Appendices G and H: all contractors, agencies and others with curation problems should consult those section dealing with the disposition and curation of collections to determine their responsibilities.

Several points of the recently developed guidelines should be noted:

(1) The PHMC retains the right of first refusal for all collections resulting from archaeological work on public lands or contract work done in compliance with federal or state laws. Ultimate control over the disposition and required curation of collections thus lies with the PHMC and all arrangements for the disposition of collections must be made through the PHMC.

(2) Although the PHMC may decide to refuse a collection, it may require of the contractor or contracting agency any alternative curation arrangements it deems necessary to adequately preserve the collection. Arrangements for the disposition of the collection must be worked out with the PHMC in advance of any action. It is suggested that such arrangements be worked out early in the planning of contracted archaeological work.

(3) Specific requirements for the labelling, etc. or archaeological materials are contained in the appendices and must be followed in handling any collections of archaeological materials under the PHMC's control.

5.2.6 Study Unit Recommendations (see Volume II)

The following recommendations are derived from suggestions made by various contributors to Volume II. They reflect expert opinion on the scientific and preservation needs of archaeological conservation efforts in the three completed study units. Although some of these recommendations have been incorporated elsewhere in this chapter, the recommendations have been summarized and reprinted here (by Study Unit) for ease of reference.

5.2.6.1 Recommendations - Study Unit I: Coastal Plain and Piedmont (Volume II, Chapter 3)

5.2.6.1.1 Research Requirements

(A) Prehistoric

(1) Basic data collection and site/assemblage descriptions are needed to remedy the current paucity of information on the problems of the Paleo-Indian/Early Archaic period, defined below.

(B) Contact (Lenape)/Early Historic

(2) Basic site information is needed relating to questions of cultural homogeneity and cultural change in the Contact (Lenape) period.

(3) Data are needed on shifts in residence area by groups in the period 1730-1760.

(4) Documentation on the variation in Lenape response to European colonial expansion is a priority.

(5) Data on mortuary patterns may provide a means of studying the interaction of the Lenape with other groups along the frontier.

(6) More use should be made of archival material in Sweden, the Netherlands, England, and Spain, relating to Lenape contacts with colonial groups.

(7) Excavation of contact period sites should be planned with regard to sampling site variability.

(8) Excavation of contact period settlements at Okehocking and Big Bend on the Brandywine, referred to in the literature but unlocated, is a priority.

(C) Historic

(9) Fragile urban resources (old land surfaces, soil lines, backyard occupation deposits) should be tested.

(10) Archaeological studies should be oriented to the recovery of information from whole communities.

(11) Tax and census records might be used to develop models of socio-economic status and ethnic roles.

(12) Insurance maps and contemporary accounts can serve as a basis for land-use models.

(13) Models of market behavior might be developed from port books, advertising, and inventory lists.

(14) A gazeteer of sites (modelled on that of New Jersey) should be compiled for southeastern Pennsylvania.

(15) Preservation efforts would be aided by the preparation of an annotated bibliography, and a hand book of county and municipal preservation resources.

(16) There is still a need for a comprehensive regional inventory of all known and potential sites, giving site locations keyed to U.S.G.S. quad maps and including information on present condition, ownership, state inventory status, excavation, etc.

5.2.6.1.2 Research Problems

(A) Paleo-Indian/Early Archaic Period

(1) How do the various Paleo-Indian/Early Archaic groups adapt to the changing environments of the Pleistocene/Holocene transition?

(2) Are current predictive models (see Vol. II, Ch. 3, Table 4) applicable?

(B) Middle Archaic

(1) How is the scheduling of resource procurement related to the emerging seasonal variation in resources.

(2) What major adjustments are made in the settlement and

subsistence systems of Holocene environments become fully developed?

(C) Late Archaic/Early-Middle Woodland

(1) How do societies adapt to the mid-post glacial xerothermic climatic interval?

(2) What is the nature of the large semi-sedentary communities that appear in certain environmental settings during this period?

(3) How do non-egalitarian social systems arise and can they be linked to initial sedentism?

(D) Contact (Lenape)/Early Historic

(1) What were the Lenape subsistence and settlement patterns in the period 1500-1600?

(2) Did the Lenape and "Jersey" Lenape differ in this period?

(3) What was the extent of Lenape territory in 1500 and how was this altered by the Susquehannock (Minquas) intrusion ca. 1600?

(4) Did the resurgence of Lenape power ca.1660 and their new alliance with the Minquas correlate with a period of band aggregation?

(5) How stable were Lenape groups before ca.1740? What degree of cultural change among the more conservative and intact bands?

(E) Historic

(1) Mercantilism and Commerce:

a. size and specialization of early commercial ventures: general stores, town markets, etc.

b. changes in scale and orientation of later businesses: banks, department stores, mail order businesses, etc.

(2) Agriculture

a. size and composition of the farming population.

b. specialization as a response to socioeconomic and technological change.

(3) Private and Public Institutions

a. the social and educational roles of churches, libraries schools, etc.

b. growing secular nature of these institutions.

(4) Transportation

a. road, canal and river transport, railroad systems: their growth and development as a response to economic change.

(5) Industry

a. shift from small craft shop production to factories: corresponding shift from town/rural to urban focus.

b. influence of power, resource and labor requirements as a factor.

(6) Residences

a. change in function.

b. change in organization of space and density of settlement.

c. socioeconomic differences reflected in dwellings and neighborhoods.

(7) Defense

a. location and arrangement of defensive works with regard to settlements.

5.2.6.2 Recommendations - Study Unit II: Ridge and Valley (Volume II, Ch.4)

5.2.6.2.1 Research Requirements

(1) Systematic and complete survey coverage of the region is a priority (see Vol. II, Ch. 4, Tables 6 and 7).

(2) The existing data base should be reorganized (e.g., PHMC site files; see below).

(3) Support for a county/regional site recording program (cf. Centre County Registration Project) and comprehensive prehistoric site survey of culturally and geographically well-defined areas.

(4) The use by researchers of the collections at the William Penn Memorial Museum should be encouraged (see above, Section 5.2.4.2).

(5) Research proposals for funding by the PHMC and other sources should address topics of scientific value (see Chapter 3).

(6) Amateurs (e.g., the SPA members) should be trained in

historical site survey and encouraged to monitor and update information on known sites.

(7) Amateurs could be trained in manuscript collections research, to aid in research on historical archaeological sites (Section 5.2.4.2).

(8) Amateurs should be trained in the recognition and recording of unrecorded historical sites and structures (Section 5.2.4.2).

(9) Typologies for historical site artifacts need to be developed and disseminated to those recording historic period sites.

5.2.6.2.2 Research Problems

(1) Environmental reconstruction

(2) Ceramic/lithic typologies

(3) Lithic technology, use-wear analysis, sourcing

(4) Alternate methods of dating (e.g. flint hydration)

(5) The adoption of agriculture and associated cultural change

(6) Social organization; studied through settlement system analysis, mortuary analysis, etc.

(7) Demographic reconstruction

(8) Variations in adaptations

(9) The analysis of local historic industry and technology

5.2.6.3 Recommendations - Study Unit III: Western Plateau (Volume II, Ch.5)

5.2.6.3.1 Research Requirements

(A) Prehistoric

(1) Site survey should be planned to correct existing gaps in geographical coverage of Paleo-Indian occupation in many counties (McKean, Elk, Potter, Forest, Venango).

(2) Problems in the definition of Paleo-Indian site types and of the period itself reflect, in part, the differential recognition and recording of Paleo-Indian sites; this situation might be corrected by systematic and comprehensive survey.

(3) Paleo-Indian site survey priorities include several stream terraces and adjacent upland areas:

(a) Chartier's Creek and adjacent areas in Washington and Allegheny Counties;

(b) Casselman River in Somerset County;

(c) areas containing possible major sites along the branches of Little Mahoning and Plum Creeks in eastern Armstrong and western Indiana Counties;

(d) an area with possible stratified sites along the Connoquenissing Creek in Butler County;

(e) the vicinity of Rymatuning Reservoir: Conneaut Lake, French Creek, and Sugar Creek;

(f) the area along Leboeuf and French Creeks near Waterford in Erie County;

(g) the outwash terraces of the Allegheny River in Warren County.

(h) the area around Lake Erie, especially Conneaut Creek

(4) Survey and excavation priorities for Early Woodland period sites are as follows:

(a) extensive testing of Early Woodland sites;

(b) the collection of radiocarbon samples from these sites;

(c) the retrieval of floral/faunal samples;

(5) Middle Woodland sites should have a high priority in prehistoric research because of the paucity of recorded data.

(6) Survey of Late Woodland sites should focus on the area between the West Branch of the Susquehanna and the Allegheny drainage.

(B) Historic

(1) Uniform guidelines and forms are needed for the recording of historic period sites, in order to:

(a) differentiate between standing structures and ruins,

(b) define associated features,

(c) define criteria for historical archaeological sites;

(2) A state-wide program is needed for the conservation of county records.

(3) The current recording of industrial-period sites in western Pennsylvania (83 sites recorded) falls far short of the predictable archaeological potential of the area and should be a major concern of historic period archaeology.

(4) The collection and preservation of primary research data of the Industrial era -- industrial records, logbooks, blueprints, photographs, etc. -- and an inventory of this material should have a high priority.

(5) Detailed plots of historic period structures and archaeological potential are needed in high-density urban areas (e.g. Pittsburgh). (See Chapter 4)

5.2.6.4 Recommendations - Study Unit IV: Eastern Pleateau; Poconos

It is obvious, by the absence of a completed summary for Study Unit IV, (Volume II) that survey and excavation to correct the present unacceptable situation should be of the greatest urgency. Any plans for statewide archaeological survey and testing should consider archaeological survey in this region as a top priority. The PHMC actively seeks proposals for archaeological research in this region, including a comprehensive survey of archaeological sites, the testing of a representative sample of these, and the intensive excavation of a few selected sites.

Several approaches to this problem might be suggested:

(1) Pennsylvania researchers should cooperate to this end with institutions in surrounding states having research interests in the region, including those in the adjoining region of New York (e.g. SUNY-Binghamton) and New Jersey. Some work in this region has already been done by archaeologists from Pennsylvania, New York and New Jersey.

(2) The existing data base should be summarized and evaluated. This might be done in a master's thesis project as part of the intern program suggested above (Section 5.2.4.3). This summary could serve as the basis for a contribution to the revised state plan.

(3) Any future modifications or revisions of the state plan (see Section 5.3) should consider the evaluation of Study Unit IV and the inclusion of a summary in the revised plan as an essential part of the revision process.

(4) Areas of this region not already marked as having a high priority in plans for survey and testing will receive particular consideration in the review of projects by the Division of Archaeology Review Archaeologists. Portions of this region are marked for development in the near future. The PHMC recognizes that developers in this region have a particular responsibility

under federal and state law, given the nature of archaeological knowledge there, to insure that their activities do not threaten irreplaceable archaeological resources.

5.2.7 Survey Recommendations

5.2.7.1 Survey Priorities

Priorities for survey and National Register nomination programs are presented in the study unit summaries of Volume II. These summaries outline both the areas where the greatest threats to archaeological resources are expected and the areas where survey and excavation coverage is most needed.

5.2.7.2 The Role of Amateurs in Survey and Site Recording

A largely neglected area of possible amateur (SPA) participation or cooperation with the PHMC is in survey and site recording. The present piecemeal approach could be greatly improved by a regular program of survey by SPA members and chapters. The PHMC has attempted to encourage the survey efforts of amateurs through the Dorrance Award given yearly to the SPA chapter with the best record for reporting sites. The response has been favorable but not overwhelming. The SPA should consider additional incentives for amateur involvement in survey and site recording and the creation in cooperation with the PHMC, of training programs to establish uniformly high standards in survey and excavation by amateurs.

5.3 Modification and Revision Procedures for the State Plan

If the state plan is to retain any value as a planning and information document, it is essential that it be modified and updated periodically to reflect the changing nature of preservation law and policy and the changing scientific criteria of site significance (see Chapter 3). All parties with an interest in the formulation of the plan -- the PHMC, PAC and the SPA -- should be involved in the revision process to provide for a representative sample of opinion and advice on changing requirements. The following section provides an outline of a suggested revision procedure. Details should be worked out between the parties names above at the earliest possible date, to insure a timely and adequate modification process. A four-year schedule for revisions seems reasonable.

5.3.1 Suggested Procedures

(1) The Pennsylvania Archaeological Council (PAC) should name a permanent State Plan committee composed of 4-6 PAC members, with responsibilities for a yearly written report to the membership. The report, containing suggested revisions to the plan, should be presented to PAC at one of its regular meetings. After comment and revision this report should be submitted to the PHMC.

(2) Likewise, the SPA should constitute a permanent committee composed of 4-6 members, including both amateur and professional representatives to annually review the State Plan. The committee would be responsible for a yearly written report to the president and membership. After comment by the members and the president (at the yearly SPA meeting?) the report would be submitted to the PHMC.

(3) A panel, composed of the Commission archaeological staff, the Director of the BHP, and the PHMC Executive Director (SHPO) should meet once a year to consider revisions to the plan and the recommendations of PAC and the SPA. The recommendations of this panel should be incorporated in a yearly report written by Commission archaeological staff.

(4) After the third yearly report all three groups -- those representing the SPA, PAC, and PHMC -- should meet to consider and draft revisions to the plan. These revisions should include:

(a) a systhesis of the previous three years' recommendations, and

(b) possible modifications to, or rewriting of, the study unit summaries.

(5) The draft revisions should be sent to the PAC and SPA membership and the relevant officials within the PHMC and in other agencies (Penn DOT, DER, etc.). An open comment period of 1-2 months should be allowed. Comments should be incorporated into the plan revisions at a second meeting of the three (SPA, PAC, PHMC) plan committees.

(6) The final revisions and any modifications or rewriting of the study unit summaries should be scheduled to allow for the publications of a revised version of the state plan every four years.

APPENDIX A

A Summary of Major Relevant Federal and State Legislation and Regulations

A.1 Federal Legislation and Regulations

A.1.1 Antiquities Act of 1906
(Public Law 34-209; 34 Stat. 225; 16 U.S.C. 431-433)

The federal government's first attempt at protecting the national cultural heritage in archaeology was the passage of the Antiquities Act in 1906. It is significant both as the first federal legislation recognizing the government's responsibility to the public to protect the common cultural heritage and as a national model for similar state legislation.

The act makes the excavation, removal, or vandalizing of archaeological or historic (and, by implication, paleontological) sites or material from federal lands a crime, punishable by fine and imprisonment. It requires permits for archaeological excavation on federal government lands, establishing professional qualifications for permit recipients and providing for the housing of excavated material in a public museum, thus making public access to the cultural heritage an integral part of preservation. Jurisdiction over the issuance of permits was given to the secretaries of Agriculture, Interior, and War. Permit applications are now made to the National Park Service (created in 1916 and given major responsibility for enforcement of the Act) except for lands under the control of the Department of Agriculture (U.S. Forest Service) and the Commissioner of Indian Affairs.

The act provides for the establishment of national monuments on federal lands. The President may declare "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments".

The Antiquities Act has served primarily as a model and basis for subsequent federal and state legislation and as a stimulus to government involvement in preservation. The provisions of the Act have rarely been applied to prevent damage to federally owned archaeological properties through prosecution and conviction of offenders.

A.1.2 The Historic Sites and Buildings Act of 1935
(Public Law 74-292; 49 Stat: 666; 16 U.S.C. 469)

The Historic Sites Act declares it to be national policy to preserve for the public sites, buildings, and objects of national significance, including property not federally owned. The National Park Service was given major responsibility for federal archaeological and preservation efforts. It was charged with a leading role, on federal lands and elsewhere, in the conduct of archaeological research, the preservation and restoration of sites, making records, maps, and drawings of archaeological and historic sites, acquiring lands and properties, operating public displays, public and contracting with others for preservation or research purposes.

An Advisory Board on National Parks, Historic Sites, Buildings, and Monuments was established and the basis laid for the National Register of Historic Places, as well as subsequent legislation culminating in the National Historic Preservation Act of 1966.

A.1.3 The Reservoir Salvage Act of 1960 (Public Law 86-523; 74 Stat: 220; 16 U.S.C. 469)

This act gave more specific direction to some of the provisions of the Historic Sites Act, specifying that some effort be made to recover historical or archaeological information threatened by the construction of a dam by a federal agency or federally licensed agency. The National Park Service was given primary responsibility for conducting or contracting for reservoir salvage work. The emphasis of the legislation was, at this time, clearly on the recovery through salvage of information threatened by construction and not on a comprehensive approach to preservation and planning.

A.1.4 The National Historic Preservation Act of 1966 (Public Law 89-665; 80 Stat: 915; 16 U.S.C. 470)

Adopting as its policy the need for a strong and consistent federal involvement in the preservation (advocated in the Special Committee on Historic Preservation report With Heritage So Rich), the National Historic Preservation Act (NHPA) marked a major step in developing a federal preservation policy. As amended and supported by later federal legislation, regulations, and Executive Order 11593, the NHPA stands as the most important and successful federal initiative in preservation. The main provisions are as follows:

1) The NHPA established a greatly expended National Register of Historic Places to incorporate sites of local and state, as well as national, significance. Inclusion on (later expanded to eligibility for) the National Register became the standard of significance in federal actions affecting archaeological sites. Provisions were made for procedures to nominate and register a wide variety of sites with a broad range of significance.

2) The Advisory Council on Historic Preservation was created to oversee compliance with federal preservation rules and decisions on National Register nominations.

3) NHPA established a program including matching grants for statewide surveys, the preparation of state preservation plans, and support for individual projects which would result in the protection or preservation of cultural resources.

4) The Act requires states to develop comprehensive preservation programs embodied in state preservation plans with a State Historic Preservation Officer responsible for the administration of the program and for liaison and compliance with the federal authorities. A state review board must be established to review and recommend sites to the National Register.

5) A program of grants-in-aid to the National Trust for Historic Preservation was created.

6) Section 106 of the NHPA, perhaps its most influential provision, requires that the head of a federal agency having direct or indirect jurisdiction over any federal or federally assisted undertaking take into account, before any federal approval or funding of the proposed project, the effect of the undertaking on any National Register site. Further, the Advisory Council must be afforded a reasonable opportunity to comment on the effect of the undertaking.

Section 106 thus provides for the consideration of cultural resources in any project (generally a land-modification project) in which the federal government is involved, making that consideration a condition for federal approval or funding. It also establishes National Register status (later eligibility) as the standard for deciding on the significance of affected cultural properties.

Regulations embodying the provisions of NHPA are codified as 36CFR800.

It should be noted that there were several weaknesses with NHPA as enacted 1966 which were subsequently remedied. Section 106 only required consideration of National Register properties, leaving vulnerable to destruction those sites which had not gone through the lengthy process of nomination, review, and listing. Executive Order 11593 and amendments to the Land and Water Conservation Fund Act of 1966 (P.L. 94-422) extended Section 106 protection to sites eligible for the National Register. Provisions for survey in advance of project approval were included in Executive Order 11593 and for funding of surveys in the Archaeological and Historic Preservation Act of 1974.

A.1.5 The Department of Transportation Act of 1966

Section 4(F) of the DOT Act of 1966 requires that federally-funded highway projects avoid all archaeological and historic properties of National Register status or eligibility unless it can be demonstrated that there is no feasible and prudent alternative to the use of the properties and that all possible efforts have been made in planning to minimize the impact of a project on cultural properties. The effort should include consultation and coordination between DOT agencies (usually the Federal Highway Administration) and other federal agencies. It should be noted that the "use" of a property by a highway project may include the holding of easements and actions that only indirectly impinge on archaeological or historical or historical sites. Section 4(F) statements are an "in-house" procedure for the Department of Transportation: no consultation with or notification of the State Historical Preservation Officer is required, although combined Section 106/4(F) statements are generally submitted for environmental review purposes.

A.1.6 The National Environmental Policy Act of 1969 (Public Law 91-190; 83 Stat. 852; 42 U.S.C. 4321-4347)

As part of the review of federal or federally-licensed or assisted projects for environmental impact, this act requires the consideration in an environmental impact statement (EIS), of the project's effect on the total environment including historic and archaeological resources. NEPA included historic preservation policy, declaring that efforts should be made by the federal government to "preserve important historic, cultural, and natural aspects of our national heritage, and maintain, whenever possible, an environment which supports diversity and variety of individual choice . . .". To this end Title II of NEPA established the Council on Environmental Quality, which in its guidelines (40 CFR 1500) provided for inclusion of the comments of the Advisory Council on Historic Preservation in an EIS. Compliance with NHPA and related legislation is required of even those projects for which a complete EIS is not prepared and published.

A.1.7 Executive Order 11593 (1971)

The primary intent of E.O. 11593 was to clarify and expand the responsibilities of federal agencies with regard to their activities under the control of NHPA. Section I directs federal agencies to institute procedures to insure that federal programs aid the preservation of properties (not federally-owned) of historic, architectural, or archaeological significance. Section 2(a) requires federal agencies to inventory properties under their control and nominate those eligible for listing on the national Register before July 1973, meanwhile exercising caution to avoid adversely effecting cultural resources. This was never accomplished and there is still disagreement among various agencies with large landholdings on what constitutes an adequate inventory (see U.S. Govt., G.A.O. 1981). Further provision was made, in Section 2(b) for protection of sites by requiring agencies to refer questions of eligibility to the Secretary of the Interior for an opinion, allowing time for comment by the Advisory Council on the effects of any project affecting sites which might be eligible. In combination with Advisory Council procedures, E.O. 11593 provides the basis for the extension of Federal protection to non-federally owned sites and to sites eligible for, as well as those listed on, the National Register.

A.1.8 The Archaeological and Historic Preservation Act of 1974 ("Moss-Bennett Act") (P.L. 93-291; 88 Stat. 174; 16 U.S.C. 469)

This act expands the provisions of earlier legislation -- the Reservoir Salvage Act of 1960, in particular -- affecting federally-related dam construction projects. It extends federal protection to sites affected by most federal or federally-assisted or licensed land-use or construction projects. The federal agency involved in such an undertaking is required to notify the Secretary of the Interior if the project will threaten significant archaeological or historical data. Note that the intent of the law is not the preservation of sites as such, but the recovery of archaeological data through appropriate means. The agency may conduct a survey to inventory cultural resources or may initiate a program to recover the data and report to the Secretary of the Interior on the results. Alternatively, it may ask Interior to do the work. In either case, up to 1% of project funds may be transferred to fund such a survey.

A.1.9 The Archaeological Resources Protection Act of 1979 (P.L. 96-95, 93 Stat. 721; 16 U.S.C. 470 aa-11). (ARPA)

This act essentially replaces or updates many portions of the Antiquities Act of 1906 in dealing with the protection of archaeological resources on federal lands (National Parks, National Forests, National Wildlife Refuges, and Federally Controlled Indian Lands.) It prohibits, subject to both criminal and civil penalties, the removal or destruction of archaeological resources from federal lands without a permit and specifies that permits may only be issued for research purposes and subject to the condition of government ownership of all collected archaeological material, although arrangements may be made for the deposit of this material in a museum or university.

A.1.10 Amendments to the National Historic Preservation Act of 1966 (1980) (Public Law 95-515; 16 U.S.C. 470)

Among the provisions added to the NHPA by these amendments are the following:

(a) authority for the certification of local governments in state historic preservation programs: certified local governments may participate in the state program by receiving federal funds to underwrite the inventory of local historic or archaeological properties, National Register nominations, and the establishment of local historic preservation review commissions, as well as other preservation activities;

(b) recognition of State Historic Preservation Officers;

(c) codification of survey responsibilities for properties owned or controlled by federal agencies;

(d) stricter standards for the protection of National Historic Landmarks;

(e) provision for objections by private property owners to the listing of their properties on the National Register.

A.1.11 Executive Order 12372 (1982) (47 Fed. Reg. 30959)

E. O. 12372 mandated major revisions in the federal preservation process, the general effect of which was to place greater emphasis on state and local control of preservation programs. Perhaps the chief provision was that revoking OMB Circular A-95. The A-95 process had provided for a central clearinghouse in each state through which preservation agencies were notified of projects potentially affecting cultural resources. E. O. 12372 calls for the Office of Management and Budget (OMB) to formulate new procedures for intergovernmental consultation and notification.

A.1.12 Major Federal Regulations

A.1.12.1 36CFR800 - Procedures for the Protection of Historic and Cultural Properties (January 1974)

These implement the provisions of the NHPA (especially Section 106) and E.O. 11593 regarding the identification of cultural resources affected by federally-related projects. In essence, they require an agency to identify properties potentially affected by a proposed undertaking and to consult with the State Historic Preservation Officer to determine the National Register eligibility of sites within the area of impact and whether the project will have any effect, adverse or otherwise, on eligible sites. Questions on eligibility are referred to the Department of the Interior for a final determination. The role of the Advisory Council in commenting upon determinations of eligibility and in reaching agreement between the agency, the Advisory Council, and the SHPO on mitigation of impact is specified in these regulations. The consensus, if reached, is embodied in a Memorandum of Agreement signed by the concerned parties.

A.1.12.2 36CFR60 - National Register of Historic Places; Nominations by States and Federal Agencies (October 1983)

These regulations deal with basic procedures for nominating sites to the National Register.

A.1.12.3 36CFR66 - Recovery of Scientific, Prehistoric, Historic, and Archaeological Data: Methods, Standards, and Reporting Requirements (January 1977)

These guidelines specify professional standards for the conduct of work required by AHPA, including personnel qualifications, (for archaeologists, these are equivalent to Society of Professional Archaeologists standards), research design and report standards, and data recovery.

A.1.12.4 36CFR61 - Procedures for Approved State and Local Government Historic Preservation Programs (April 1984)

The responsibilities of the State Historic Preservation Officer (SHPO) and the SHPO staff are stipulated by these regulations. They specify, as well, the nature and purpose of comprehensive state preservation plans, the nature of the planning process, and requirements for a program of statewide survey. The regulations allow some flexibility in the form and content of state plans, while requiring them to conform to basic federal policy. The development of adequate surveys and plans is made a condition for receipt of money under NHPA.

A.1.12.5 36CFR63 - Determination of Eligibility for Inclusion in the National Register of Historic Places (September 1977)

36CFR63 outlines the information requirements and procedures to be following by federal agencies in providing information to the Secretary of the Interior for determining the eligibility of a site for the National Register.

A.1.12.6 Additional regulations of relevance to preservation:

a) 40 CFR 1500 - Guidelines for the Preparation of Environmental Impact Statements (Council on Environmental Quality)
b) 33 CFR 305 - Identification and Administration of Cultural Resources (Department of the Army) (April 1978)
c) 36 CFR 801 - Historic Preservation Requirements of the Urban Development Action Grant Program (HUD) (January 1981)

A.2 Commonwealth of Pennsylvania Regulations

A.2.1 The Pennsylvania Historic Preservation Act of 1978 (#1978-273)

The Historic Preservation Act (PHPA) declares that the Commonwealth, through the Pennsylvania Historical and Museum Commission, is the trustee for the preservation of the historic values of the environment, that these values are expressed in the irreplaceable historical, architectural, archaeological, and cultural heritage of the Commonwealth, that this heritage is threatened by social and economic development in contemporary society, and that it is, therefore, in the public interest for the Commonwealth to engage in comprehensive programs of historic preservation. The main provisions of the PHPA are as follows:

1) The Commission is directed to:

a) initiate and coordinate a statewide survey to identify and record historic resources and an inventory (the Pennsylvania Register of Historic Places);

b) conduct research and compile information on cultural resources;

c) prepare a comprehensive plan for preservation within the Commonwealth (pursuant to 36CFR61) and undertake such activities as will quality the Commonwealth for federal programs and funding;

d) provide information, advice, and technical assistance to individuals, organizations, and public officials engaged in preservation activities and advise public officials on the planning and implementation of undertakings affecting historic resources as well as coordinating and commenting upon those activities;

e) contract with public officials and agencies for preservation purposes and acquire easements in historic resources and properties;

f) rent or lease historic properties for preservation purposes; and

g) engage in public education activities.

2) A Historic Preservation Board is established with responsibilities for consultation, review, and comment on general preservation matters and nominations to the National Register.

3) The Commonwealth, through the commission, reserves to itself the

exclusive right to conduct archaeological field investigations on sites owned by it. The results of the statewide archaeological survey shall be made available to Commonwealth agencies to assist them in the protection of archaeological resources. Permits for archaeological field studies may be issued subject to conditions for insuring the adequate reporting of results and the ultimate ownership by the commission of all material collected during such investigations.

4) All public officials are required to cooperate with the Commission by:

- a) notifying the Commission before engaging in any Commonwealth or Commonwealth-assisted or licensed project that may affect cultural resources;
- b) providing the Commission with information on the project known to the agency or its contractors.

5) Upon notification of a possible threat to archaeological sites, the Commission may conduct or cause to be conducted a survey to recover, preserve, or protect information from a site.

6) Agencies, officials, and employees of the Commonwealth must:

- a) consult the Commission before altering or demolishing any property of known or potential archaeological, historic, architectural, or cultural significance under their jurisdiction;
- b) initiate measures to maintain properties under their jurisdiction eligible for the Pennsylvania Register, and
- c) adopt and submit to the Commission for review policies and procedures to insure that their planning and activities are consistent with preservation goals.

7) Agencies and officials must give timely notice to the Commission of proposed transfers of Commonwealth-owned or controlled property. The Commission may recommend that conditions be placed on the transfer to protect or preserve historic resources.

A.2.2 Article 28-A of the Commonwealth of Pennsylvania Administrative Code of 1929: "Powers and Duties of the Pennsylvania Historical and Museum Commission"

This section of the Administrative Code, added in 1945 and subsequently revised, incorporates earlier regulations regarding the Pennsylvania Historical Commission and summarizes the responsibilities of the PHMC. The chief provisions with regard to the archaeological program of the PHMC are as follows:

1) The PHMC is to assume the powers and duties formerly vested in and imposed upon the Pennsylvania Historical Commission and the State Museum. As the official agency responsible for the conservation of the Commonwealth's historic (archaeological) heritage it is to do the following:

2) erect and maintain historical markers or monuments at the sites in the Commonwealth where "historical events" have occurred and undertake the restoration and preservation of "ancient or historical" sites;

3) publish and sell books and other materials of historical or archaeological interest;

4) by itself or in cooperation with other organizations, conduct investigations on matters of historical or archaeological interest and inform the public of the results of this research;

5) receive on behalf of the Commonwealth gifts and bequests of relics, articles of historical interest, and funds for historical or archaeological research and conservation;

6) review "the design and proposed location of any project, building, or other undertaking financed in whole or in part by Commonwealth funds which may affect the preservation and development of a historical site or district or building designated to be of significance and value in the history of Pennsylvania . . . ";

7) "examine, or cause to be examined or excavated the sites of former aboriginal...occupation" and historic period settlement and report the results; compile lists of archaeological and historic sites; conduct historical research related to the above sites; the above-mentioned activities subject to the provision that all information, documents, collections, etc. resulting from these historical or archaeological investigations shall be the property of the Commonwealth to be deposited in the State Museum or elsewhere at the discretion of the PHMC.

8) consult and procure the advice of experts in archaeology, anthropology, history, etc. in performing its duties.

A.2.3 Article I, Section 27 of the Pennsylvania Constitution ("Environmental Rights Amendment"; added 1971)

"The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people." (emphasis added)

A.3 Texts of Major Preservation Legislation and Regulations

A.3.1

Text of the

National Historic Preservation Act of 1966, as amended

National Historic Preservation Act of 1966, as amended

AN ACT to Establish a Program for the Preservation of Additional Historic Properties throughout the Nation, and for Other Purposes, Approved October 15, 1966 (Public Law 89-665; 80 STAT. 915; 16 U.S.C. 470) as amended by Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244, and Public Law 96-515).

Section 1

Short title

(a) This Act may be cited as the "National Historic Preservation Act."

Purpose of the Act

(b) The Congress finds and declares that—

(1) the spirit and direction of the Nation are founded upon and reflected in its historic heritage;

(2) the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people;

(3) historic properties significant to the Nation's heritage are being lost or substantially altered, often inadvertently, with increasing frequency;

(4) the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans;

(5) in the face of ever-increasing extensions of urban centers, highways, and residential, commercial, and industrial developments, the present governmental and nongovernmental historic preservation programs and activities are inadequate to insure future generations a genuine opportunity to appreciate and enjoy the rich heritage of our Nation;

(6) the increased knowledge of our historic resources, the establishment of better means of identifying and administering them, and the encouragement of their preservation will improve the planning and execution of Federal and federally assisted projects and will assist economic growth and development; and

(7) although the major burdens of historic preservation have been borne and major efforts initiated by private agencies and individuals, and both should continue to play a vital role, it is nevertheless necessary and appropriate for the Federal Government to accelerate its historic preservation programs and activities, to give maximum encouragement to agencies and individuals undertaking preservation by private means, and to assist State and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

Section 2

Declaration of policy

It shall be the policy of the Federal Government, in cooperation with other nations and in partnership with the States, local governments, Indian tribes, and private organizations and individuals to—

(1) use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations;

(2) provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations;

(3) administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations;

(4) contribute to the preservation of nonfederally owned prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means;

(5) encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment; and

(6) assist State and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

TITLE I

Section 101

National Register of Historic Places, expansion and maintenance

(a)(1)(A) The Secretary of the Interior is authorized to expand and maintain a National Register of Historic Places composed of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture.

National Historic Landmarks, designation

(B) Properties meeting the criteria for National Historic Landmarks established pursuant to paragraph (2) shall be designated as "National Historic Landmarks" and included on the National Register, subject to the requirements of paragraph (6). All historic properties included on the National Register on the date of enactment of the National Historic Preservation Act Amendments of 1980 shall be deemed to be included on the National Register as of their initial listing for purposes of this Act. All historic properties listed in the Federal Register of February 6, 1979, as "National Historic Landmarks" or thereafter prior to the effective date of this Act are declared by Congress to be National Historic Landmarks of national historic significance as of their initial listing as such in the Federal Register for purposes of this Act and the Act of August 21, 1935 (49 Stat. 666); except that in cases of National Historic Landmark districts for which no boundaries have been established, boundaries must first be published in the Federal Register and submitted to the Committee on Energy and Natural Resources of the United States Senate and to the Committee on Interior and Insular Affairs of the United States House of Representatives.

Criteria for National Register and National Historic Landmarks and regulations

(2) The Secretary in consultation with national historic and archeological associations, shall establish or revise criteria for properties to be included on the National Register and criteria for National Historic Landmarks, and shall also promulgate or revise regulations as may be necessary for—

(A) nominating properties for inclusion in, and removal from, the National Register and the recommendation of properties by certified local governments;

(B) designating properties as National Historic Landmarks and removing such designation;

(C) considering appeals from such recommendations, nomination, removals, and designations (or any failure or refusal by a nominating authority to nominate or designate);

(D) nominating historic properties for inclusion in the World Heritage List in accordance with the terms of the Convention concerning the Protection of the World Cultural and Natural Heritage;

(E) making determinations of eligibility of properties for inclusion on the National Register; and

(F) notifying the owner of a property, any appropriate local governments, and the general public, when the property is being considered for inclusion on the National Register, for designation as a National Historic Landmark or for nomination to the World Heritage List.

Nominations to the National Register

(3) Subject to the requirements of paragraph (6), any State which is carrying out a program approved under subsection (b), shall nominate to the Secretary properties which meet the criteria promulgated under subsection (a) for inclusion on the National Register. Subject to paragraph (6), any property nominated under this paragraph or under section 110(a)(2) shall be included on the National Register on the date forty-five days after receipt by the Secretary of the nomination and the necessary documentation, unless the Secretary disapproves such nomination within such forty-five day period or unless an appeal is filed under paragraph (5).

Nominations from individuals and local governments

(4) Subject to the requirements of paragraph (6) the Secretary may accept a nomination directly from any person or local government for inclusion of a property on the National Register only if such property is located in a State where there is no program approved under subsection (b). The Secretary may include on the National Register any property for which such a nomination is made if he determines that such property is eligible in accordance with the regulations promulgated under paragraph (2). Such determinations shall be made within ninety days from the date of nomination unless the nomination is appealed under paragraph (5).

peals of nominations

(5) Any person or local government may appeal to the Secretary a nomination of any historic property for inclusion on the National Register and may appeal to the Secretary the failure or refusal of a nominating authority to nominate a property in accordance with this subsection.

ner participation in nomination process

(6) The Secretary shall promulgate regulations requiring that before any property or district may be included on the National Register or designated as a National Historic Landmark, the owner or owners of such property, or a majority of the owners of the properties within the district in the case of an historic district, shall be given the opportunity (including a reasonable period of time) to concur in, or object to, the nomination of the property or district for such inclusion or designation. If the owner or owners of any privately owned property, or a majority of the owners of such properties within the district in the case of an historic district, object to such inclusion or designation, such property shall not be included on the National Register or designated as a National Historic Landmark until such objection is withdrawn. The Secretary shall review the nomination of the property or district where any such objection has been made and shall determine whether or not the property or district is eligible for such inclusion or designation, and if the Secretary determines that such property or district is eligible for such inclusion or designation, he shall inform the Advisory Council on Historic Preservation, the appropriate State Historic Preservation Officer, the appropriate chief elected local official and the owner or owners of such property, of his determination. The regulations under this paragraph shall include provisions to carry out the purposes of this paragraph in the case of multiple ownership of a single property.

ulations for curation, documentation,
local government certification

(7) The Secretary shall promulgate, or revise, regulations—

(A) ensuring that significant prehistoric and historic artifacts, and associated records, subject to section 110 of this Act, the Act of June 27, 1960 (16 U.S.C. 469c), and the Archeological Resources Protection Act of 1979 (16 U.S.C. 470aa and following) are deposited in an institution with adequate long-term curatorial capabilities;

(B) establishing a uniform process and standards for documenting historic properties by public agencies and private parties for purposes of incorporation into, or complementing, the national historic architectural and engineering records within the Library of Congress; and

(C) certifying local governments, in accordance with subsection (c)(1) and for the allocation of funds pursuant to section 103(c) of this Act.

e Historic Preservation Programs

(b)(1) The Secretary, in consultation with the National Conference of State Historic Preservation Officers and the National Trust for Historic Preservation, shall promulgate or revise regulations for State Historic Preservation Programs. Such regulations shall provide that a State program submitted to the Secretary under this section shall be approved by the Secretary if he determines that the program—

gnation of the State Historic
ervation Officer (SHPO)

(A) provides for the designation and appointment by the Governor of a "State Historic Preservation Officer" to administer such program in accordance with paragraph (3) and for the employment or appointment by such officer of such professionally qualified staff as may be necessary for such purposes;

(B) provides for an adequate and qualified State historic preservation review board designated by the State Historic Preservation Officer unless otherwise provided for by State law; and

(C) provides for adequate public participation in the State Historic Preservation Program, including the process of recommending properties for nomination to the National Register.

ew of State programs

(2) Periodically, but not less than every four years after the approval of any State program under this subsection, the Secretary shall evaluate such program to make a determination as to whether or not it is in compliance with the requirements of this Act. If at any time, the Secretary determines that a State program does not comply with such requirements, he shall disapprove such program, and suspend in whole or in part assistance to such State under subsection (d)(1), unless there are adequate assurances that the program will comply with such requirements within a reasonable period of time. The Secretary may also conduct periodic fiscal audits of State programs approved under this section.

SHPO responsibilities

(3) It shall be the responsibility of the State Historic Preservation Officer to administer the State Historic Preservation Program and to—

(A) in cooperation with Federal and State agencies, local governments, and private organizations and individuals, direct and conduct a comprehensive statewide survey of historic properties and maintain inventories of such properties;

(B) identify and nominate eligible properties to the National Register and otherwise administer applications for listing historic properties on the National Register;

(C) prepare and implement a comprehensive statewide historic preservation plan;

(D) administer the State program of Federal assistance for historic preservation within the State;

(E) advise and assist, as appropriate, Federal and State agencies and local governments in carrying out their historic preservation responsibilities;

(F) cooperate with the Secretary, the Advisory Council on Historic Preservation, and other Federal and State agencies, local governments, and organizations and individuals to ensure that historic properties are taken into consideration at all levels of planning and development;

(G) provide public information, education and training, and technical assistance relating to the Federal and State Historic Preservation Programs; and

(H) cooperate with local governments in the development of local historic preservation programs and assist local governments in becoming certified pursuant to subsection (c).

Arrangements with nonprofit organizations

(4) Any State may carry out all or any part of its responsibilities under this subsection by contract or cooperative agreement with any qualified nonprofit organization or educational institution.

Approval of existing programs

(5) Any State historic preservation program in effect under prior authority of law may be treated as an approved program for purposes of this subsection until the earlier of—

(A) the date on which the Secretary approves a program submitted by the State under this subsection, or

(B) three years after the date of the enactment of the National Historic Preservation Act Amendments of 1980.

Certification of local governments

(c)(1) Any State program approved under this section shall provide a mechanism for the certification by the State Historic Preservation Officer of local governments to carry out the purposes of this Act and provide for the transfer, in accordance with section 103(c), of a portion of the grants received by the States under this Act, to such local governments. Any local government shall be certified to participate under the provisions of this section if the applicable State Historic Preservation Officer, and the Secretary, certifies that the local government—

(A) enforces appropriate State or local legislation for the designation and protection of historic properties;

(B) has established an adequate and qualified historic preservation review commission by State or local legislation;

(C) maintains a system for the survey and inventory of historic properties that furthers the purposes of subsection (b);

(D) provides for adequate public participation in the local historic preservation program, including the process of recommending properties for nomination to the National Register; and

(E) satisfactorily performs the responsibilities delegated to it under this Act.

Where there is no approved State program, a local government may be certified by the Secretary if he determines that such local government meets the requirements of subparagraphs (A) through (E); and in any such case the Secretary may make grants-in-aid to the local government for purposes of this section.

rticipation of certified local governments National Register nominations

(2)(A) Before a property within the jurisdiction of the certified local government may be considered by the State to be nominated to the Secretary for inclusion on the National Register, the State Historic Preservation Officer shall notify the owner, the applicable chief local elected official, and the local historic preservation commission. The commission, after reasonable opportunity for public comment, shall prepare a report as to whether or not such property, in its opinion, meets the criteria of the National Register. Within sixty days of notice from the State Historic Preservation Officer, the chief local elected official shall transmit the report of the commission and his recommendation to the State Historic Preservation Officer. Except as provided in subparagraph (B), after receipt of such report and recommendation, or if no such report and recommendation are received within sixty days, the State shall make the nomination pursuant to section 101(a). The State may expedite such process with the concurrence of the certified local government.

(B) If both the commission and the chief local elected official recommend that a property not be nominated to the National Register, the State Historic Preservation Officer shall take no further action, unless within thirty days of the receipt of such recommendation by the State Historic Preservation Officer an appeal is filed with the State. If such an appeal is filed, the State shall follow the procedures for making a nomination pursuant to Section 101(a). Any report and recommendations made under this section shall be included with any nomination submitted by the State to the Secretary.

(3) Any local government certified under this section or which is making efforts to become so certified shall be eligible for funds under the provision of section 103(c) of this Act, and shall carry out any responsibilities delegated to it in accordance with such terms and conditions as the Secretary deems necessary or advisable.

ants to States

(d)(1) The Secretary shall administer a program of matching grants-in-aid to the States for historic preservation projects, and State historic preservation programs, approved by the Secretary and having as their purpose the identification of historic properties and the preservation of properties included on the National Register.

ants to the National Trust

(2) The Secretary shall administer a program of matching grants-in-aid to the National Trust for Historic Preservation in the United States, chartered by Act of Congress approved October 26, 1949 (63 Stat. 947), for the purposes of carrying out the responsibilities of the National Trust.

ect grants for threatened National storic Landmarks, demonstration jects, training, and displacement vention

(3)(A) In addition to the programs under paragraphs (1) and (2), the Secretary shall administer a program of direct grants for the preservation of properties included on the National Register. Funds to support such program annually shall not exceed 10 per centum of the amount appropriated annually for the fund established under section 108. These grants may be made by the Secretary, in consultation with the appropriate State Historic Preservation Officer—

(i) for the preservation of National Historic Landmarks which are threatened with demolition or impairment and for the preservation of historic properties of World Heritage significance;

(ii) for demonstration projects which will provide information concerning professional methods and techniques having application to historic properties;

(iii) for the training and development of skilled labor in trades and crafts, and in analysis and curation, relating to historic preservation; and,

(iv) to assist persons or small businesses within any historic district included in the National Register to remain within the district.

nts and loans to minority groups

(B) The Secretary may also, in consultation with the appropriate State Historic Preservation Officer, make grants or loans or both under this section to Indian tribes and to nonprofit organizations representing ethnic or minority groups for the preservation of their cultural heritage.

(C) Grants may be made under subparagraph (A)(i) and (iv) only to the extent that the project cannot be carried out in as effective a manner through the use of an insured loan under section 104.

hibition on compensating intervenors

(e) No part of any grant made under this section may be used to compensate any person intervening in any proceeding under this Act.

idelines for Federal agency ponsibilities

(f) In consultation with the Advisory Council on Historic Preservation, the Secretary shall promulgate guidelines for Federal agency responsibilities under section 110 of this title.

Preservation standards for federally owned properties

(g) Within one year after the date of enactment of the National Historic Preservation Act Amendments of 1980, the Secretary shall establish, in consultation with the Secretaries of Agriculture and Defense, the Smithsonian Institution, and the Administrator of the General Services Administration, professional standards for the preservation of historic properties in Federal ownership or control.

Technical advice

(h) The Secretary shall develop and make available to Federal agencies, State and local governments, private organizations and individuals, and other nations and international organizations pursuant to the World Heritage Convention, training in, and information concerning professional methods and techniques for the preservation of historic properties and for the administration of the historic preservation program at the Federal, State, and local level. The Secretary shall also develop mechanisms to provide information concerning historic preservation to the general public including students.

Section 102

Grants requirements

(a) No grant may be made under this Act—

(1) unless application therefore is submitted to the Secretary in accordance with regulations and procedures prescribed by him;

(2) unless the application is in accordance with the comprehensive statewide historic preservation plan which has been approved by the Secretary after considering its relationship to the comprehensive statewide outdoor recreation plan prepared pursuant to the Land and Water Conservation Fund Act of 1965 (78 Stat. 897);

(3) for more than 50 per centum of the aggregate cost of carrying out projects and programs specified in section 101(d) (1) and (2) in any one fiscal year, except that for the costs of State or local historic surveys or inventories the Secretary shall provide 70 per centum of the aggregate cost involved in any one fiscal year;

(4) unless the grantee has agreed to make such reports, in such form and containing such information as the Secretary may from time to time require;

(5) unless the grantee has agreed to assume, after completion of the project, the total cost of the continued maintenance, repair, and administration of the property in a manner satisfactory to the Secretary; and

(6) until the grantee has complied with such further terms and conditions as the Secretary may deem necessary or advisable.

Except as permitted by other law, the State share of the costs referred to in paragraph (3) shall be contributed by non-Federal sources. Notwithstanding any other provision of law, no grant made pursuant to this Act shall be treated as taxable income for purposes of the Internal Revenue Code 1954.

Waiver for the National Trust

(b) The Secretary may in his discretion waive the requirements of subsection (a), paragraphs (2) and (5) of this section for any grant under this Act to the National Trust for Historic Preservation in the United States, in which case a grant to the National Trust may include funds for the maintenance, repair, and administration of the property in a manner satisfactory to the Secretary.

Limitation on matching

(c) No State shall be permitted to utilize the value of real property obtained before the date of approval of this Act in meeting the remaining cost of a project for which a grant is made under this Act.

Section 103

Apportionment of survey and planning grants

(a) The amounts appropriated and made available for grants to the States for comprehensive statewide historic surveys and plans under this Act shall be apportioned among the States by the Secretary on the basis of needs as determined by him.

Apportionment of project and program grants

(b) The amounts appropriated and made available for grants to the States for projects and programs under this Act for each fiscal year shall be apportioned among the States by the Secretary in accordance with needs as disclosed in approved statewide historic preservation plans. The Secretary shall notify each State of its apportionment under this subsection within thirty days following the date of enactment of legislation appropriating funds under this Act. Any amount of any apportionment that has not been paid or obligated by the Secretary during the fiscal year in which such notification is given and for two fiscal years thereafter, shall be reapportioned by the Secretary in accordance with this subsection.

Apportionment to certified local governments

(c) A minimum of 10 per centum of the annual apportionment distributed by the Secretary to each State for the purposes of carrying out this Act shall be transferred by the State, pursuant to the requirements of this Act, to local governments which are certified under section 101(c) for historic preservation projects or programs of such local governments. In any year in which the total annual apportionment to the States exceeds $65,000,000, one half of the excess shall also be transferred by the States to local governments certified pursuant to section 101(c).

Guidelines for apportionment to local governments

(d) The Secretary shall establish guidelines for the use and distribution of funds under subsection (c) to insure that no local government receives a disproportionate share of the funds available, and may include a maximum or minimum limitation on the amount of funds distributed to any single local government. The guidelines shall not limit the ability of any State to distribute more than 10 per centum of its annual apportionment under subsection (c), nor shall the Secretary require any State to exceed the 10 per centum minimum distribution to local governments.

Section 104

Insured loans for National Register properties

(a) The Secretary shall establish and maintain a program by which he may, upon application of a private lender, insure loans (including loans made in accordance with a mortgage) made by such lender to finance any project for the preservation of a property included on the National Register.

Requirements

(b) A loan may be insured under this section only if—

(1) the loan is made by a private lender approved by the Secretary as financially sound and able to service the loan properly;

(2) the amount of the loan, and interest rate charged with respect to the loan, do not exceed such amount, and such a rate, as is established by the Secretary, by rule;

(3) the Secretary has consulted the appropriate State Historic Preservation Officer concerning the preservation of the historic property;

(4) the Secretary has determined that the loan is adequately secured and there is reasonable assurance of repayment;

(5) the repayment period of the loan does not exceed the lesser of forty years or the expected life of the asset financed;

(6) the amount insured with respect to such loan does not exceed 90 per centum of the loss sustained by the lender with respect to the loan; and

(7) the loan, the borrower, and the historic property to be preserved meet other terms and conditions as may be prescribed by the Secretary, by rule, especially terms and conditions relating to the nature and quality of the preservation work.

Interest rates

The Secretary shall consult with the Secretary of the Treasury regarding the interest rate of loans insured under this section.

Limitation on loan authority

(c) The aggregate unpaid principal balance of loans insured under this section and outstanding at any one time may not exceed the amount which has been covered into the Historic Preservation Fund pursuant to section 108 and subsection (g) and (i) of this section, as in effect on the date of the enactment of the Act but which has not been appropriated for any purpose.

Assignability and effect

(d) Any contract of insurance executed by the Secretary under this section may be assignable, shall be an obligation supported by the full faith and credit of the United States, and shall be incontestable except for fraud or misrepresentation of which the holder had actual knowledge at the time it became a holder.

Method of payment for losses

(e) The Secretary shall specify, by rule and in each contract entered into under this section, the conditions and method of payment to a private lender as a result of losses incurred by the lender on any loan insured under this section.

Protection of Government's financial interests; foreclosure

(f) In entering into any contract to insure a loan under this section, the Secretary shall take steps to assure adequate protection of the financial interests of the Federal Government. The Secretary may—

(1) in connection with any foreclosure proceeding, obtain, on behalf of the Federal Government, the property securing a loan insured under this title; and

(2) operate or lease such property for such period as may be necessary to protect the interest of the Federal Government and to carry out subsection (g).

Conveyance of foreclosed property

(g)(1) In any case in which a historic property is obtained pursuant to subsection (f), the Secretary shall attempt to convey such property to any governmental or nongovernmental entity under such conditions as will ensure the property's continued preservation and use; except that if, after a reasonable time, the Secretary, in consultation with the Advisory Council on Historic Preservation, determines that there is no feasible and prudent means to convey such property and to ensure its continued preservation and use, then the Secretary may convey the property at the fair market value of its interest in such property to any entity without restriction.

(2) Any funds obtained by the Secretary in connection with the conveyance of any property pursuant to paragraph (1) shall be covered into the historic preservation fund, in addition to the amounts covered into such fund pursuant to section 108 and subsection (i) of this section, and shall remain available in such fund until appropriated by the Congress to carry out the purposes of this Act.

Fees

(h) The Secretary may assess appropriate and reasonable fees in connection with insuring loans under this section. Any such fees shall be covered into the Historic Preservation Fund, in addition to the amounts covered into such fund pursuant to section 108 and subsection (g) of this section, and shall remain available in such fund until appropriated by the Congress to carry out the purposes of this Act.

Loans to be considered non-Federal funds

(i) Notwithstanding any other provision of law, any loan insured under this section shall be treated as non-Federal funds for the purposes of satisfying any requirement of any other provision of law under which Federal funds to be used for any project or activity are conditioned upon the use of non-Federal funds by the recipient for payment of any portion of the costs of such project or activity.

Appropriation authorization

(j) Effective after the fiscal year 1981 there are authorized to be appropriated, such sums as may be necessary to cover payments incurred pursuant to subsection (e).

Prohibition against acquisition by Federal Financing Bank

(k) No debt obligation which is made or committed to be made, or which is insured or committed to be insured, by the Secretary under this section shall be eligible for purchase by, or commitment to purchase by, or sale or issuance to, the Federal Financing Bank.

Section 105

Recordkeeping

The beneficiary of assistance under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the disposition by the beneficiary of the proceeds of such assistance, the total cost of the project or undertaking in connection with which such assistance is given or used, and the amount and nature of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

Section 106

Advisory Council on Historic Preservation, comment on Federal undertakings

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

Section 107

Exemption of White House, Supreme Court, and Capitol

Nothing in this Act shall be construed to be applicable to the White House and its grounds, the Supreme Court building and its grounds, or the United States Capitol and its related buildings and grounds.

Section 108

Establishment of Historic Preservation Fund; authorization for appropriations

To carry out the provisions of this Act, there is hereby established the Historic Preservation Fund (hereafter referred to as the "fund") in the Treasury of the United States.
There shall be covered into such fund $24,400,000 for fiscal year 1977, $100,000,000 for fiscal year 1978, $100,000,000 for fiscal year 1979, $150,000,000 for fiscal year 1980, $150,000,000 for fiscal year 1981, and $150,000,000 for each of fiscal years 1982 through 1987, from revenues due and payable to the United States under the Outer Continental Shelf Lands Act (67 Stat. 462, 469) as amended (43 U.S.C. 338) and/or under the Act of June 4, 1920 (41 Stat. 813) as amended (30 U.S.C. 191), notwithstanding any provision of law that such proceeds shall be credited to miscellaneous receipts of the Treasury. Such moneys shall be used only to carry out the purposes of this Act and shall be available for expenditure only when appropriated by the Congress. Any moneys not appropriated shall remain available in the fund until appropriated for said purposes: Provided, that appropriations made pursuant to this paragraph may be made without fiscal year limitation.

Section 109

Donations to the Secretary

(a) In furtherance of the purposes of sections of this Act, the Secretary may accept the donation of funds which may be expended by him for projects to acquire, restore, preserve, or recover data from any district, building, structure, site, or object which is listed on the National Register of Historic Places established pursuant to section 101 of this Act, so long as the project is owned by a State, any unit of local government, or any nonprofit entity.

Expenditure of donated funds

(b) In expending said funds, the Secretary shall give due consideration to the following factors: the national significance of the project; its historical value to the community; the imminence of its destruction or loss; and the expressed intentions of the donor. Funds expended under this subsection shall be made available without regard to the matching requirements established by section 102 of this Act, but the recipient of such funds shall be permitted to utilize them to match any grants from the Historic Preservation Fund established by section 108 of this Act.

Transfer of funds donated for the National Park Service

(c) The Secretary is hereby authorized to transfer unobligated funds previously donated to the Secretary for purposes of the National Park Service, with the consent of the donor, and any funds so transferred shall be used or expended in accordance with the provisions of this Act.

Section 110

Federal agencies' responsibility to preserve and use historic buildings

(a)(1) The heads of all Federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for purposes of carrying out agency responsibilities, each Federal agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with the preservation of such properties and the mission of the agency and the professional standards established pursuant to section 101(f), any preservation, as may be necessary to carry out this section.

Protection and nomination to the National Register of Federal properties

(2) With the advice of the Secretary and in cooperation with the State Historic Preservation Officer for the State involved, each Federal agency shall establish a program to locate, inventory, and nominate to the Secretary all properties under the agency's ownership or control by the agency, that appear to qualify for inclusion on the National Register in accordance with the regulations promulgated under section 101(a)(2)(A). Each Federal agency shall exercise caution to assure that any such property that might qualify for inclusion is not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly.

Recordation of historic properties prior to demolition

(b) Each Federal agency shall initiate measures to assure that where, as a result of Federal action or assistance carried out by such agency, an historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records, and that such records then be deposited, in accordance with section 101(a), in the Library of Congress or with such other appropriate agency as may be designated by the Secretary, for future use and reference.

Designation of Federal agency preservation officers

(c) The head of each Federal agency shall, unless exempted under section 214, designate a qualified official to be known as the agency's "preservation officer" who shall be responsible for coordinating that agency's activities under this Act. Each Preservation Officer may, in order to be considered qualified, satisfactorily complete an appropriate training program established by the Secretary under section 101(g).

Conduct of agency programs consistent with Act

(d) Consistent with the agency's mission and mandates, all Federal agencies shall carry out agency programs and projects (including those under which any Federal assistance is provided or any Federal license, permit, or other approval is required) in accordance with the purposes of this Act and, give consideration to programs and projects which will further the purposes of this Act.

Transfer of surplus Federal historic properties

(e) The Secretary shall review and approve the plans of transferees of surplus federally owned historic properties not later than ninety days after his receipt of such plans to ensure that the prehistorical, historical, architectural, or culturally significant values will be preserved or enhanced.

Federal undertakings affecting National Historic Landmarks

(f) Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

Preservation activities as an eligible project cost

(g) Each Federal agency may include the costs of preservation activities of such agency under this Act as eligible project costs in all undertakings of such agency or assisted by such agency. The eligible project costs may also include amounts paid by a Federal agency to any State to be used in carrying out such preservation responsibilities of the Federal agency under this Act, and reasonable costs may be charged to Federal licensees and permittees as a condition to the issuance of such license or permit.

Preservation awards program

(h) The Secretary shall establish an annual preservation awards program under which he may make monetary awards in amounts not to exceed $1,000 and provide citations for special achievements to officers and employees of Federal, State, and certified local governments in recognition of their outstanding contributions to the preservation of historic resources. Such program may include the issuance of annual awards by the President of the United States to any citizen of the United States recommended for such award by the Secretary.

Applicability of National Environmental Policy Act

(i) Nothing in this Act shall be construed to require the preparation of an environmental impact statement where such a statement would not otherwise be required under the National Environmental Policy Act of 1969, and nothing in this Act shall be construed to provide any exemption from any requirement respecting the preparation of such a statement under such Act.

(j) The Secretary shall promulgate regulations under which the requirements of this section may be waived in whole or in part in the event of a major natural disaster or an imminent threat to the national security.

Section 111

Leases or exchanges of Federal historic properties

(a) Notwithstanding any other provision of law, any Federal agency may, after consultation with the Advisory Council on Historic Preservation, lease an historic property owned by the agency to any person or organization, or exchange any property owned by the agency with comparable historic property, if the agency head determines that the lease or exchange will adequately insure the preservation of the historic property.

Use of proceeds

(b) The proceeds of any lease under subsection (a) may, notwithstanding any other provision of law, be retained by the agency entering into such lease and used to defray the costs of administration, maintenance, repair, and related expenses incurred by the agency with respect to such property or other properties which are on the National Register which are owned by, or are under the jurisdiction or control of, such agency. Any surplus proceeds from such leases shall be deposited into the Treasury of the United States at the end of the second fiscal year following the fiscal year in which such proceeds were received.

Management contracts

(c) The head of any Federal agency having responsibility for the management of any historic property may, after consultation with the Advisory Council on Historic Preservation, enter into contracts for the management of such property. Any such contract shall contain such terms and conditions as the head of such agency deems necessary or appropriate to protect the interests of the United States and insure adequate preservation of historic property.

TITLE II

Section 201

Advisory Council on Historic Preservation; membership

(a) There is established an Advisory Council on Historic Preservation (hereinafter referred to as the "Council") which shall be composed of the following members:

(1) a Chairman appointed by the President selected from the general public;

(2) the Secretary of the Interior;

(3) the Architect of the Capitol;

(4) the Secretary of Agriculture and the heads of four other agencies of the United States (other than the Department of the Interior), the activities of which affect historic preservation, appointed by the President;

(5) one Governor appointed by the President;

(6) one mayor appointed by the President;

(7) the President of the National Conference of State Historic Preservation Officers;

(8) the Chairman of the National Trust for Historic Preservation;

(9) four experts in the field of historic preservation appointed by the President from the disciplines of architecture, history, archeology, and other appropriate disciplines; and,

(10) three at-large members from the general public, appointed by the President.

Designees

(b) Each member of the Council specified in paragraphs (2) through (8) (other than (5) and (6)) may designate another officer of his department, agency, or organization to serve on the Council in his stead, except that, in the case of paragraphs (2) and (4), no such officer other than an Assistant Secretary or an officer having major department-wide or agency-wide responsibilities may be so designated.

Term of office

(c) Each member of the Council appointed under paragraph (1), and under paragraphs (9) and (10) of subsection (a) shall serve for a term of four years from the expiration of his predecessor's term; except that the members first appointed under that paragraph shall serve for terms of one to four years, as designated by the President at the time of appointment, in such manner as to insure that the terms of not more than two of them will expire in any one year. The members appointed under paragraphs (5) and (6) shall serve for the term of their elected office but not in excess of four years. An appointed member whose term has expired shall serve until that member's successor has been appointed.

Vacancies

(d) A vacancy in the Council shall not affect its powers, but shall be filled not later than sixty days after such vacancy commences, in the same manner as the original appointment (and for the balance of any unexpired terms). The members of the Advisory Council on Historic Preservation appointed by the President under this Act as in effect on the day before the enactment of the National Historic Preservation Act Amendments of 1980 shall remain in office until all members of the Council, as specified in this section, have been appointed. The members first appointed under this section shall be appointed not later than one hundred and eighty days after the enactment of the National Historic Preservation Act Amendments of 1980.

Vice Chairman

(e) The President shall designate a Vice Chairman, from the members appointed under paragraphs (5), (6), (9), or (10). The Vice Chairman may act in place of the Chairman during the absence or disability of the Chairman or when the office is vacant.

Quorum

(f) Nine members of the Council shall constitute a quorum.

Section 202

Duties of Council

(a) The Council shall—

(1) advise the President and the Congress on matters relating to historic preservation, recommend measures to coordinate activities of Federal, State, and local agencies and private institutions and individuals relating to historic preservation; and advise on the dissemination of information pertaining to such activities;

(2) encourage, in cooperation with the National Trust for Historic Preservation and appropriate private agencies, public interest and participation in historic preservation;

(3) recommend the conduct of studies in such areas as the adequacy of legislative and administrative statutes and regulations pertaining to historic preservation activities of State and local governments and the effects of tax policies at all levels of government on historic preservation;

(4) advise as to guidelines for the assistance of State and local governments in drafting legislation relating to historic preservation;

(5) encourage, in cooperation with appropriate public and private agencies and institutions, training and education in the field of historic preservation;

(6) review the policies and programs of Federal agencies and recommend to such agencies methods to improve the effectiveness, coordination, and consistency of those policies and programs with the policies and programs carried out under this Act; and,

(7) inform and educate Federal agencies, State and local governments, Indian tribes, other nations and international organizations and private groups and individuals as to the Council's authorized activities.

Annual and special reports

(b) The Council shall submit annually a comprehensive report of its activities and the results of its studies to the President and the Congress and shall from time to time submit such additional and special reports as it deems advisable. Each report shall propose such legislative enactments and other actions as, in the judgment of the Council, are necessary and appropriate to carry out its recommendations and shall provide the Council's assessment of current and emerging problems in the field of historic preservation and an evaluation of the effectiveness of the programs of Federal agencies, State and local governments, and the private sector in carrying out the purposes of this Act.

Section 203

Information from agencies

The Council is authorized to secure directly from any department, bureau, agency, board, commission, office, independent establishment or instrumentality of the executive branch of the Federal Government information, suggestions, estimates, and statistics for the purpose of this title; and each such department or instrumentality is authorized to furnish such information, suggestions, estimates, and statistics to the extent permitted by law and within available funds.

Section 204

Compensation of members

The members of the Council specified in paragraphs (2), (3), and (4) of section 201(a) shall serve without additional compensation. The other members of the Council shall receive $100 per diem when engaged in the performances of the duties of the Council. All members of the Council shall receive reimbursement for necessary traveling and subsistence expenses incurred by them in the performance of the duties of the Council.

Section 205

Executive Director

(a) There shall be an Executive Director of the Council who shall be appointed in the competitive service by the Chairman with the concurrence of the Council. The Executive Director shall report directly to the Council and perform such functions and duties as the Council may prescribe.

General Counsel and attorneys

(b) The Council shall have a General Counsel, who shall be appointed by the Executive Director. The General Counsel shall report directly to the Executive Director and serve as the Council's legal advisor. The Executive Director shall appoint such other attorneys as may be necessary to assist the General Counsel, represent the Council in courts of law whenever appropriate, including enforcement of agreements with Federal agencies to which the Council is a party, assist the Department of Justice in handling litigation concerning the Council in courts of law, and perform such other legal duties and functions as the Executive Director and the Council may direct.

Appointment and compensation of staff

(c) The Executive Director of the Council may appoint and fix the compensation of such officers and employees in the competitive service as are necessary to perform the functions of the Council at rates not to exceed that now or hereafter prescribed for the highest rate for grade 15 of the General Schedule under section 5332 of title 5, United States Code: *Provided, however,* That the Executive Director, with the concurrence of the Chairman, may appoint and fix the compensation of not to exceed five employees in the competitive service at rates not to exceed that now or hereafter prescribed for the highest rate of grade 17 of the General Schedule under section 5332 of Title 5, United States Code.

Appointment and compensation of additional personnel

(d) The Executive Director shall have power to appoint and fix the compensation of such additional personnel as may be necessary to carry out its duties, without regard to the provisions of the civil service laws and the Classification Act of 1949.

Consultants

(e) The Executive Director of the Council is authorized to procure expert and consultant services in accordance with the provisions of section 3109 of title 5, United States Code.

Financial and administrative services

(f) Financial and administrative services (including those related to budgeting, accounting, financial reporting, personnel and procurement) shall be provided the Council by the Department of the Interior, for which payments shall be made in advance, or by reimbursement, from funds of the Council in such amounts as may be agreed upon by the Chairman of the Council and the Secretary of the Interior; *Provided,* That the regulations of the Department of the Interior for the collection of indebtedness of personnel resulting from erroneous payments (5 U.S.C. 46e) shall apply to the collection of erroneous payments made to or on behalf of a Council employee, and regulations of said Secretary for the administrative control of funds (31 U.S.C. 665(g)) shall apply to appropriations of the Council: *And provided further,* That the Council shall not be required to prescribe such regulations.

Provision of assistance by members

(g) The members of the Council specified in paragraphs (2) through (4) of section 201(a) shall provide the Council, with or without reimbursement as may be agreed upon by the Chairman and the members, with such funds, personnel, facilities, and services under their jurisdiction and control as may be needed by the Council to carry out its duties, to the extent that such funds, personnel, facilities, and services are requested by the Council and are otherwise available for that purpose. To the extent of available appropriations, the Council may obtain, by purchase, rental, donation, or otherwise, such additional property, facilities, and services as may be needed to carry out its duties and may also receive donations of moneys for such purpose, and the Executive Director is authorized, in his discretion, to accept, hold, use, expend, and administer the same for the purposes of this Act.

Section 206

iternational Centre for the Study of the reservation and Restoration of Cultural roperty; authorization

(a) The participation of the United States as a member of the International Centre for the Study of the Preservation and Restoration of Cultural Property is hereby authorized.

lembers of official delegation

(b) The Council shall recommend to the Secretary of State, after consultation with the Smithsonian Institution and other public and private organizations concerned with the technical problems of preservation, the members of the official delegation which will participate in the activities of the Centre on behalf of the United States. The Secretary of State shall appoint the members of the official delegation from the persons recommended to him by the Council.

uthorization for membership payment

(c) For the purposes of this section there is authorized to be appropriated an amount equal to the assessment for United States membership in the Centre for fiscal years 1979, 1980, 1981, and 1982: *Provided*, That no appropriation is authorized and no payment shall be made to the Centre in excess of 25 per centum of the total annual assessment of such organization. Authorization for payment of such assessment shall begin in fiscal year 1981, but shall include earlier costs.

Section 207

ansfer of funds

So much of the personnel, property, records, and unexpended balances of appropriations, allocations, and other funds employed, held, used, programmed, or available or to be made available by the Department of the Interior in connection with the functions of the Council, as the Director of the Office of Management and Budget shall determine, shall be transferred from the Department to the Council within 60 days of the effective date of this Act.

Section 208

Rhts of Council employees

Any employee in the competitive service of the United States transferred to the Council under the provisions of this section shall retain all rights, benefits, and privileges pertaining thereto held prior to such transfer.

Section 209

Emption from Federal Advisory Cnmittee Act

The Council is exempt from the provisions of the Federal Advisory Committee Act (86 Stat. 770), and the provisions of the Administrative Procedure Act (80 Stat. 381) shall govern the operations of the Council.

Section 210

Smission to the Congress

No officer or agency of the United States shall have any authority to require the Council to submit its legislative recommendations, or testimony, or comments on legislation to any officer or agency of the United States for approval, comments, or review, prior to the submission of such recommendations, testimony, or comments to the Congress. In instances in which the Council voluntarily seeks to obtain the comments or review of any officer or agency of the United States, the Council shall include a description of such actions in its legislative recommendations, testimony, or comments on legislation which it transmits to the Congress.

Section 211

Rulations for Section 106; local gernment participation

The Council is authorized to promulgate such rules and regulations it deems necessary to govern the implementation of section 106 of this Act. The Council shall, by regulation, establish such procedures as may be necessary to provide for participation by local governments in proceedings and other actions taken by the Council with respect to undertakings referred to in section 106 which affect such local governments.

Section 212

Council appropriation authorization

(a) The Council shall submit its budget annually as a related agency of the Department of the Interior. To carry out the provisions of this title, there are authorized to be appropriated not more than $1,500,000 in fiscal year 1977, $1,750,000 in fiscal year 1978, and $2,000,000 in fiscal year 1979. There are authorized to be appropriated not to exceed $2,250,000 in fiscal year 1980, $2,500,000 in fiscal year 1981, $2,500,000 in fiscal year 1982, and $2,500,000 in fiscal year 1983.

Concurrent submission of budget to Congress

(b) Whenever the Council submits any budget estimate or request to the President or the Office of Management and Budget, it shall concurrently transmit copies of that estimate or request to the House and Senate Appropriations Committees and the House Committee on Interior and Insular Affairs and the Senate Committee on Energy and Natural Resources.

Section 213

Reports from Secretary at request of Council

To assist the Council in discharging its responsibilities under this Act, the Secretary at the request of the Chairman, shall provide a report to the Council detailing the significance of any historic property, describing the effects of any proposed undertaking on the affected property, and recommending measures to avoid, minimize, or mitigate adverse effects.

Section 214

Exemptions for Federal activities from provisions of the Act

The Council, with the concurrence of the Secretary, shall promulgate regulations or guidelines, as appropriate, under which Federal programs or undertakings may be exempted from any or all of the requirements of this Act when such exemption is determined to be consistent with the purposes of this Act, taking into consideration the magnitude of the exempted undertaking or program and the likelihood of impairment of historic properties.

TITLE III

Section 301

efinitions

As used in this Act, the term—

(1) "Agency" means agency as such term is defined in section 551 of title 5, United States Code, except that in the case of any Federal program exempted under section 214, the agency administering such program shall not be treated as an agency with respect to such program.

(2) "State" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands.

(3) "Local government" means a city, county, parish, township, municipality, or borough, or any other general purpose political subdivision of any State.

(4) "Indian tribe" means the governing body of any Indian tribe, band, nation, or other group which is recognized as an Indian tribe by the Secretary of the Interior for which the United States holds land in trust or restricted status for the entity or its members. Such term also includes any Native village corporation, regional corporation, and Native Group established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1701 et seq.).

(5) "Historic property" or "historic resource" means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register; such term includes artifacts, records, and remains which are related to such a district, site, building, structure, or object.

(6) "National Register" or "Register" means the National Register of Historic Places established under section 101.

(7) "Undertaking" means any action as described in section 106.

(8) "Preservation" or "historic preservation" includes identification, evaluation, recordation, documentation, curation, acquisition, protection, management, rehabilitation, restoration, stabilization, maintenance and reconstruction, or any combination of the foregoing activities.

(9) "Cultural park" means a definable urban area which is distinguished by historic resources and land related to such resources and which constitutes an interpretive, educational, and recreational resource for the public at large.

(10) "Historic conservation district" means an urban area of one or more neighborhoods and which contains (A) historic properties, (B) buildings having similar or related architectural characteristics, (C) cultural cohesiveness, or (D) any combination of the foregoing.

(11) "Secretary" means the Secretary of the Interior except where otherwise specified.

(12) "State Historic Preservation Review Board" means a board, council, commission, or other similar collegial body established as provided in section 101(b)(1)(B)—

(A) the members of which are appointed by the State Historic Preservation Officer (unless otherwise provided for by State law),

(B) a majority of the members of which are professionals qualified in the following and related disciplines: history, prehistoric and historic archeology, architectural history, and architecture, and

(C) which has the authority to—

(i) review National Register nominations and appeals from nominations;

(ii) review appropriate documentation submitted in conjunction with the Historic Preservation Fund;

(iii) provide general advice and guidance to the State Historic Preservation Officer, and

(iv) perform such other duties as may be appropriate.

(13) "Historic preservation review commission" means a board, council, commission, or other similar collegial body which is established by State or local legislation as provided in section 101(c)(1)(B), and the members of which are appointed, unless otherwise provided by State or local legislation, by the chief elected official of the jurisdiction concerned from among—

(A) professionals in the disciplines of architecture, history, architectural history, planning, archeology, or related disciplines, to the extent such professionals are available in the community concerned, and

(B) such other persons as have demonstrated special interest, experience, or knowledge in history, architecture, or related disciplines and as will provide for an adequate and qualified commission.

Section 302

Authority to expend funds for purposes of this Act

Where appropriate, each Federal agency is authorized to expend funds appropriated for its authorized programs for the purposes of activities carried out pursuant to this Act, except to the extent appropriations legislation expressly provides otherwise.

Section 303

Donations to Secretary; money and personal property

(a) The Secretary is authorized to accept donations and bequests of money and personal property for the purposes of this Act and shall hold, use, expend, and administer the same for such purposes.

Donations of less than fee interests in real property

(b) The Secretary is authorized to accept gifts or donations of less than fee interests in any historic property where the acceptance of such interests will facilitate the conservation or preservation of such properties. Nothing in this section or in any provision of this Act shall be construed to affect or impair any other authority of the Secretary under other provision of law to accept or acquire any property for conservation or preservation or for any other purpose.

Section 304

Confidentiality of the location of sensitive historic resources

The head of any Federal agency, after consultation with the Secretary, shall withhold from disclosure to the public, information relating to the location or character of historic resources whenever the head of the agency or the Secretary determines that the disclosure of such information may create a substantial risk of harm, theft, or destruction to such resources or to the area or place where such resources are located.

Section 305

Attorneys' fees

In any civil action brought in any United States district court by any interested person to enforce the provisions of this Act, if such person substantially prevails in such action, the court may award attorneys' fees, expert witness fees, and other costs of participating in such action, as the court deems reasonable.

Section 306

tional Center for the Building Arts

(a) In order to provide a national center to commemorate and encourage the building arts and to preserve and maintain a nationally significant building which exemplifies the great achievements of the building arts in the United States, the Secretary and the Administrator of the General Services Administration are authorized and directed to enter into a cooperative agreement with the Committee for a National Museum of the Building Arts, Incorporated, a nonprofit corporation organized and existing under the laws of the District of Columbia, or its successor, for the operation of a National Museum for the Building Arts in the Federal Building located in the block bounded by Fourth Street, Fifth Street, F Street, and G Street, Northwest in Washington, District of Columbia. Such museum shall—

(1) collect and disseminate information concerning the building arts, including the establishment of a national reference center for current and historic documents, publications, and research relating to the building arts;

(2) foster educational programs relating to the history, practice and contribution to society of the building arts, including promotion of imaginative educational approaches to enhance understanding and appreciation of all facets of the building arts;

(3) publicly display temporary and permanent exhibits illustrating, interpreting and demonstrating the building arts;

(4) sponsor or conduct research and study into the history of the building arts and their role in shaping our civilization; and

(5) encourage contributions to the building arts.

operative agreement

(b) The cooperative agreement referred to in subsection (a) shall include provisions which—

(1) make the site available to the Committee referred to in subsection (a) without charge;

(2) provide, subject to available appropriations, such maintenance, security, information, janitorial and other services as may be necessary to assure the preservation and operation of the site; and

(3) prescribe reasonable terms and conditions by which the Committee can fulfill its responsibilities under this Act.

ants to Committee

(c) The Secretary is authorized and directed to provide matching grants-in-aid to the Committee referred to in subsection (a) for its programs related to historic preservation. The Committee shall match such grants-in-aid in a manner and with such funds and services as shall be satisfactory to the Secretary, except that no more than $500,000 may be provided to the Committee in any one fiscal year.

e renovation

(d) The renovation of the site shall be carried out by the Administrator with the advice of the Secretary. Such renovation shall, as far as practicable—

(1) be commenced immediately,

(2) preserve, enhance, and restore the distinctive and historically authentic architectural character of the site consistent with the needs of a national museum of the building arts and other compatible use, and

(3) retain the availability of the central court of the building, or portions thereof, for appropriate public activities.

nual report

(e) The Committee shall submit an annual report to the Secretary and the Administrator concerning its activities under this section and shall provide the Secretary and the Administrator with such other information as the Secretary may, from time to time, deem necessary or advisable.

Definition of "building arts"

(f) For purposes of this section, the term "building arts" includes, but shall not be limited to, all practical and scholarly aspects of prehistoric, historic, and contemporary architecture, archeology, construction, building technology and skills, landscape architecture, preservation and conservation, building and construction, engineering, urban and community design and renewal, city and regional planning, and related professions, skills, trades and crafts.

Section 307

Transmittal of regulations to Congressional committees

(a) At least thirty days prior to publishing in the Federal Register any proposed regulation required by this Act, the Secretary shall transmit a copy of the regulation to the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the Senate. The Secretary also shall transmit to such committees a copy of any final regulation prior to its publication in the Federal Register. Except as provided in subsection (b) of this section, no final regulation of the Secretary shall become effective prior to the expiration of thirty calendar days after it is published in the Federal Register during which either or both Houses of Congress are in session.

Emergency regulations

(b) In the case of an emergency, a final regulation of the Secretary may become effective without regard to the last sentence of subsection (a) if the Secretary notified in writing the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate setting forth the reasons why it is necessary to make the regulation effective prior to the expiration of the thirty-day period.

Disapproval by Congress

(c) Except as provided in subsection (b), the regulation shall not become effective if, within ninety calendar days of continuous session of Congress after the date of promulgation, both Houses of Congress adopt a concurrent resolution, the matter after the resolving clause of which is as follows: "That Congress disapproves the regulation promulgated by the Secretary dealing with the matter of ________, which regulation was transmitted to Congress on ________," the blank spaces therein being appropriately filled.

Inaction by Congress

(d) If at the end of sixty calendar days of continuous session of Congress after the date of promulgation of a regulation, no committee of either House of Congress has reported or been discharged from further consideration of a concurrent resolution disapproving the regulation, and neither House has adopted such a resolution, the regulation may go into effect immediately. If, within such sixty calendar days, such a committee has reported or been discharged from further consideration of such a resolution, the regulation may go into effect not sooner than ninety calendar days of continuous session of Congress after its promulgation unless disapproved as provided for.

Definitions

(e) For the purposes of this section—

(1) continuity of session is broken only by an adjournment sine die; and

(2) the days on which either House is not in session because of an adjournment of more than three days to a day certain are excluded in the computation of sixty and ninety calendar days of continuous session of Congress.

Effect of Congressional inaction

(f) Congressional inaction on or rejection of a resolution of disapproval shall not be deemed an expression of approval of such regulation.

(Public Law 96-515 contained additional provisions, which were not amendments to the National Historic Preservation Act but which relate to that Act, as follows:)

X X X X X X X X X X X X X X X

SEC. 208. Notwithstanding section 7(a) of the Act of June 27, 1960 (16 U.S.C. 469c), or any other provision of law to the contrary--

(1) identification, surveys, and evaluation carried out with respect to historic properties within project areas may be treated for purposes of any law or rule of law as planning costs of the project and not a costs of mitigation;

(2) reasonable costs for identification, surveys, evaluation, and data recovery carried out with respect to historic properties within project areas may be charged to Federal licensees and permittees as a condition to the issuance of such license or permit; and

(3) Federal agencies, with the concurrence of the Secretary and after notification of the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, are authorized to waive, in appropriate cases, the 1 per centum limitation contained in section 7(a) of such Act.

A.3.2.

Text of 36CFR800

36 CFR 800, Protection of Historic and Cultural Properties

[4310-10-M]

Title 36—Parks, Forests, and Public Property

CHAPTER VIII—ADVISORY COUNCIL ON HISTORIC PRESERVATION

PART 800—PROTECTION OF HISTORIC AND CULTURAL PROPERTIES

Amendments to Existing Regulations

AGENCY: Advisory Council on Historic Preservation.

ACTION: Final amendments to regulations.

SUMMARY: These regulations implement Section 106 of the National Historic Preservation Act 1966, as amended (16 U.S.C. 470), and two Presidential directives issued pursuant to Section 106—Executive Order 11593, May 13, 1971, "Protection and Enhancement of the Cultural Environment" (36 FR 8921, 16 U.S.C. 470), and the President's Memorandum on Environmental Quality and Water Resources Management, July 12, 1978. The regulations have been amended to reflect changes and additions to the Council's authorities, as well as experience gained in working with the process since the last publication of regulations in 1974. These amendments are intended to expedite and clarify the commenting process required by Section 106 of the National Historic Preservation Act.

EFFECTIVE DATE: March 1, 1979.

FOR FURTHER INFORMATION CONTACT:

John M. Fowler, Acting General Counsel, Advisory Council on Historic Preservation, 1522 K Street, NW, Washington, D.C. 20005, 202-254-3967.

SUPPLEMENTARY INFORMATION:

BACKGROUND

The Advisory Council on Historic Preservation is publishing these final amendments to its existing regulations to implement Section 106 of the National Historic Preservation Act, as amended (16 U.S.C. 470f). The purpose of Section 106 is to protect properties included in or eligible for inclusion in the National Register of Historic Places through review and comment by the Council on Federal undertakings that affect such properties. Properties are listed on the National Register or declared eligible for listing by the Secretary of the Interior. As implemented through these regulations, the Section 106 process is a public interest process in which the Federal agency proposing an undertaking, the State Historic Preservation Officer, the Council, and interested organizations and individuals participate. The process is designed to assure that alternatives to avoid or mitigate an adverse effect on a National Register or eligible property are adequately considered in the planning processes. The regulations are binding on all Federal agencies and specify the manner in which the Council will render its comments to Federal agencies when their undertakings affect properties included in or eligible for inclusion in the National Register of Historic Places. To facilitate processing of the large volume of cases submitted for Council comment each year, the regulations provide for agency consultation with the Council staff and State Historic Preservation Officers to reduce the number of undertakings that require consideration by the full Council.

The purpose of the present amendments is to reduce procedural delay, encourage agencies to develop internal regulations to comply with the requirements of the Act and these regulations, to clarify the process since the last publication of the Council's regulations in 1974, and to implement the directives in the President's Memorandum on Environmental Quality and Water Resources Management.

In late 1977, the Council staff began a reassessment of the existing regulations codified in 1974 in 36 CFR Part 800, in an effort to determine what changes, clarifications, or modifications were necessary. In July of 1978, the President issued the Memorandum on Environmental Quality and Water Resources Management which directed the Chairman of the Council to review and promulgate regulations implementing the Act and the Memorandum by March 1, 1979. Accordingly, the existing regulations were amended to reflect changes in statutory authority, experience gained in implementing the procedures since 1974, and to meet the demands of the President's Memorandum.

The Council published proposed amendments to the existing regulations in the FEDERAL REGISTER on October 30, 1978, and invited public comment for a 30 day period. A number of Federal agencies and others requested extension of the comment period. On November 28, 1978, the Council published notice in the FEDERAL REGISTER extending the comment period for an additional thirty days until December 29, 1978, providing for a 60 day comment period in total. A public briefing for interested agencies, organizations, and individuals on the proposed amendments was held on December 11, 1978. Council staff also actively cooperated with the Secretary of the Interior's Water Policy Implementation Task Force on Environmental Statutes. The Task Force was convened in response to the directives contained in the President's Memorandum. The Task Force was charged with reviewing the draft regulations and informally offering comments to the Council on whether the regulations comply with the directive.

Pursuant to the President's Memorandum, agencies with consultation responsibilities under the Act must develop regulations to be approved by the Chairman of the Council in response to these regulations. Such agencies must publish regulations no later than three months after the effective date of these regulations. Other agencies may choose to adopt counterpart regulations specifically tailored to their particular program needs as stipulated in these regulations.

These regulations issued pursuant to 16 U.S.C. 470s were adopted by unanimous vote of the full Council in open session on January 17, 1979. As directed by the President, the amended regulations will be effective March 1, 1979.

SUMMARY OF MAJOR CHANGES

The flow of the commenting process established by the 1974 regulations remains basically unchanged in the present amendments. However, the regulations have been renumbered and rearranged from the 1974 publication for greater clarity. The following major changes have been made in the regulations:

1. Section 800.4(a) has been substantially revised to provide further guidance to Federal agencies on the identification of National Register and eligible properties.
2. A new § 800.5 has been added to define the responsibilities of State Historic Preservation Officers in the commenting process.
3. Section 800.6(d) authorizes the Chairman to appoint a panel of five members of the Council to consider undertakings in lieu of consideration by the full Council.
4. A new § 800.7 has been added dealing with resources discovered during construction.
5. A new § 800.8 has been added dealing with Programmatic Memoranda of Agreement allowing an agency to obtain the Council's comments for a particular program or class of undertakings that would otherwise require numerous individual requests for comments.
6. Section 800.9 revises the original section dealing with the National Environmental Policy Act to reflect new Council on Environmental Quality regulations.
7. A new § 800.11 has been added to authorize counterpart regulations permitting agencies to develop regulations which, if approved by the Chair-

man may be used to meet certain requirements of these regulations.

8. A new § 800.15 has been added dealing with public participation in the Section 106 review process.

9. A new § 800.14 has been added on Supplementary Guidance. The Supplementary Guidelines included in the proposed amendments have been deleted. Supplementary Guidelines II and IV have been included in § 800.13.

10. Throughout the amended regulations, time limits have been established to expedite the process while encouraging maximum public participation.

Comments and the Council's Response

The Council received 128 comments prior to the close of the comment period on December 29, 1978. An additional 16 comments were received between December 30, 1978, and the Council meeting on January 17 and 18, 1979. All comments were submitted to the Council members for review prior to the meeting. Comments were received from 32 Federal agencies, 27 State Historic Preservation Officers, 33 State or local governments, and 52 private organizations or individuals, and one U.S. Senator.

Section 800.1 Purpose and Authorities

The section was slightly reworded in response to several suggestions to make the language closer to that of the Act and Executive Order. A section was added summarizing the President's Memorandum on Environmental Quality and Water Resources Management.

Section 800.2 Definitions

Section 800.2(c) was clarified in response to several agency comments that the scope of the term "undertaking" was too broad and unclear. Of particular concern was the inclusion of activities proposed by Federal agencies for Congressional authorization or appropriation. This definition is not to be construed as requiring general program authorization and program appropriation requests to be reviewed under these regulations. The purpose is to ensure proper and timely consideration of specific activities that will have significant impacts on National Register or eligible properties and that provide limited opportunity after Congressional action to consider alternatives to avoid or mitigate these impacts. Such activities are usually major Federal construction projects that are proposed for Congressional approval at a specific site or with specific design features, such as a dam. Section 106 review would be appropriate prior to authorization or, in the case of projects authorized without prior Section 106 compliance, during the agency's formulation of a budget request to be submitted to the Office of Management and Budget. In either event agencies should complete their Section 106 responsibilities prior to making submissions to the Office of Management and Budget. Agencies will comply with the requirements of OMB Circular A-10, which concerns budget confidentiality.

Authorizations for programs that will have uniform adverse effects on National Register or eligible properties and where the legislative terms of authorization may severely limit the opportunity to avoid or mitigate adverse effects on a case by case basis are also included. An example would be the recent Special Bridge Replacement Program, which, in its original form, prohibited the use of funds for anything but replacement of unsafe bridges. The result was that alternatives such as rehabilitation were foreclosed when a particular National Register or eligible bridge was proposed for replacement. When seeking Council comments on such a program agencies should follow the provisions of § 800.8, "Programmatic Memorandum of Agreement."

The definition of eligible property contained in § 800.2(*f*) has been rewritten to more closely reflect statutory language and was changed in response to a Federal member agency. Several commenters were of the opinion that the Council should review only those undertakings affecting properties actually listed on the National Register. Such a limitation is contrary to the mandate of the National Historic Preservation Act, and was not adopted.

A definition of the area of the undertaking's potential environmental impact is contained in § 800.2(o). Several comments expressed concern about the difficulty in defining this term. The definition no longer includes reference to secondary effects and is consistent with the definition adopted by the Council on Environmental Quality. This new section has been modified since the draft amendments by the addition of the requirement that the boundaries of such an area are to be determined by the Agency Official and the State Historic Preservation Officer.

Section 800.2(p), Consulting Parties, is a new section. Many commenters expressed confusion as to who the parties to the consultation process were.

Section 800.3 Criteria of Effect and Adverse Effect

Section 800.3 was the subject of many comments. The entire section has been reworked for greater clarity. A definition of direct and indirect effects has been added and the definition deliberately tracks that used by the Council on Environmental Quality for purposes of the National Environmental Policy Act. The new language of this section is now tied closely to the National Register Criteria. One commenter suggested that only significant effects be covered by these regulations. This comment was not adopted because it is contrary to statutory requirements.

Section 800.4 Federal Agency Responsibilities

This section describes the means by which a Federal agency should identify National Register or eligible properties and determine whether an undertaking affects such properties and provides for coordination with the State Historic Preservation Officers. A large number of comments were received on the entire section. Many Federal agencies felt that further clarification of the entire section was needed. In response to these comments, the section has been re-structured. The Council has adopted a reasonable effort standard for Federal agencies to meet in identifying National Register and eligible properties. Federal agency responsibilities for determination of effect are also set forth in this section. The ultimate responsibility for compliance with the regulations rests with the Federal agency and cannot be delegated by it.

Section 800.4(a) has been altered in response to numerous comments including several from Federal agencies. The section has been re-drafted to set forth a logical sequence needed to identify properties. Throughout the process of identification, there should be consultation between the Agency Official and the State Historic Preservation Officer. The section makes clear that an agency can request the Council's comments simultaneously with a request for eligibility from the Secretary of the Interior. The Council believes that the reorganized section is clearer and that it will allow agencies to know in more precise terms what is required to identify National Register or eligible properties.

Section 800.4(b), Determination of Effect, also received numerous comments from Federal agencies and others. The section on No Effect (800.4(b)(1)) has been clarified concerning how an objection can be made and the manner in which the Executive Director will respond.

Section 800.4(c) concerning Determination of No Adverse Effect has been clarified in response to several comments. No Adverse Effect Determinations must be made in consultation with the appropriate State Historic Preservation Officer and evidence of contact with a State Historic Preservation Officer must be included in the documentation forwarded to the

Council if the State Historic Preservation Officer does not respond to a request under the provisions of § 800.5.

Section 800.4(d) has been slightly altered in response to several comments. The transmittal of a Preliminary Case Report will be the request for the comments of the Council.

A new § 800.4(e) has been added providing that good faith consultation would prevent an agency from proceeding with an undertaking until the Council has provided its comments. The section, while appearing in substantially the same form in several sections in the draft amendments, is now one section. It is included as one section at the request of a Federal agency member of the Council.

SECTION 800.5 STATE HISTORIC PRESERVATION OFFICER RESPONSIBILITIES

Section 800.5, State Historic Preservation Officer Responsibilities, is a new section. The section establishes deadlines for response on the part of this official, after which the process may continue if no response has been received. Pursuant to a substantial number of comments, however, lack of response by the State Historic Preservation Officer will no longer be deemed concurrence, although the review may still proceed. Several commenters suggested that the "shoulds" used in this section be changed to "shalls." The suggestion was rejected because the Council lacks authority to impose mandatory requirements on these State officials.

SECTION 800.6 COUNCIL COMMENTS

This section concerns the manner in which the Council will render its comments. There were a substantial number of comments on this section. In response to these comments, numerous changes were made to clear up ambiguities and make the Council's commenting process more expeditious.

Section 800.6(a) concerns the manner in which the Executive Director will respond to an agency Determination of No Adverse Effect. In response to comments, a specific time limit has been placed on the Executive Director's acceptance of adequate documentation and the time period for review of such Determinations of No Adverse Effect has been reduced from the 45 days stipulated in the 1974 regulations to 30 days.

A new § 800.6(a)(2) provides that the Executive Director may specify conditions to remove an objection to a No Adverse Effect Determination. Several commenters suggested that the State Historic Preservation Officer should be included in this process. It is the intention of the Council to include the State Historic Preservation Officer through the addition of a provision in § 800.6(a)(2) which allows the Executive Director to consult the State Historic Preservation Officer and other interested parties.

Section 800.6(b) parallels the existing regulations. However, several changes have been made, including provisions for specific time limits throughout the consultation process. Although a number of commenters felt that parties in interest to an undertaking should have the status of a consulting party, these comments were not adopted because the Council does not believe that it can impose such a uniform requirement due to the wide variety of agency programs. At the request of several Federal agencies, a lead agency provision is also included in this section.

In response to comments, § 800.6(b)(3) has been changed to provide that the public information meeting should be held near the site of the undertaking.

A new § 800.6(b)(6) on acceptance of adverse effect has been included. Previously, the Council equated acceptance of Adverse Effect with mitigation measures such as recording of a structure that was being demolished. The Council realizes that there are circumstances in which adverse effects on National Register or eligible properties must be accepted in the public interest. In such instances, the adverse effect will be accepted, generally with a proviso that a recording effort be part of the agreement.

Section 800.6(b)(7) has been clarified in response to comments. Any one of the consulting parties may declare a failure in the consultation process upon written notice to the Executive Director who is required to notify the Chairman of the failure within 15 days.

Section 800.6(c) concerning the Memorandum of Agreement has been rewritten in response to comments. An important change from the existing regulations is an expedited method for preparing the Memorandum of Agreement. A Federal agency will prepare a proposal, which together with the written concurrence of the State Historic Preservation Officer can be transmitted to the Executive Director and incorporated into the Memorandum of Agreement.

Many commenters agreed with the Council that this would speed up the process, but only if there were time limits placed on the process for ratification of an agreement. The Council agreed and a limit of 10 days has been imposed for transmittal of such Memoranda to the Chairman.

A new § 800.6(c)(3) dealing with the effect of a Memorandum of Agreement has been added. This subsection provides that if an agency fails to carry out the terms of the agreement that the comments of the Council must again be requested. Several commenters suggested that in such instances agencies should be admonished that no further action on the undertaking should proceed until the Council has commented. The Council agrees and this section has been revised accordingly.

In response to comments, § 800.6(c)(4) has been changed to provide that any signatory to the agreement can request a change in the terms. At the request of several commenters a new section has also been added which requires the Agency Official to provide a report on actions taken to carry out the terms of the agreement.

Section 800.6(d) dealing with Council meetings has been revised in response to comments. When the Chairman decides against consideration by the Council of a proposed undertaking, it can be scheduled if three members of the Council object. The proposed amendments would have required that a majority of the members object. Numerous commenters felt that such a large number was unrealistic. A major change from the 1974 regulations is the provision for a panel of members to consider an undertaking on behalf of the full Council. Such a panel would be composed of 5 members, three non-Federal members and two Federal members, neither of whom represents the agency proposing the undertaking. The Council believes that this provision will serve to both increase the number of cases referred for Council consideration and to expedite those cases. Several Council members felt that consideration of an undertaking by a panel would not be representative of the full range of views provided by the entire Council membership. After discussion at the full Council meeting on January 17, 1979, it was agreed that panel consideration of an undertaking may be advantageous in some situations. However, the Council felt that this provision should be re-examined in one year to determine the effectiveness of panel review of undertakings.

A number of comments were received on the section dealing with the review of a panel decision. Many commenters pointed out that an appeal of a panel decision by any one of the parties involved as proposed in the draft amendments could actually delay the process rather than speeding it up. The Council agrees with this assessment and the appeal provision has been deleted. However, if an agency determines not to follow the comments of a panel after considering the comments, it must provide notice to the Chairman in order to provide opportunity to have the matter considered by the full Council. Because of the nature of panel consideration of an undertaking, the comments were not adopted which suggested that no consideration of an undertaking beyond a panel was necessary.

In response to comments, time limits for notice of Council meetings and statements to the Council have been extended to provide ample opportunity for public participation. Section 800.6(d)(5) has been changed to provide that the comments of the Council will be issued within 15 days after a meeting and that such comments will be made available to interested parties, including the State Historic Preservation Officer.

SECTION 800.7 RESOURCES DISCOVERED DURING CONSTRUCTION

This section was proposed as a addition to the 1974 regulations. As originally proposed, the section was intended to establish a limited time period for the Council to provide its comments to an agency when a resource eligible for the National Register was discovered during the actual construction of a project after an agency had previously completed its Section 106 responsibilities. While there were several unqualified endorsements, the majority of the commenters felt that the section as proposed would cause undue project delays resulting in additional costs. The section was substantially rewritten in light of these comments. The mandatory halt of construction has been eliminated, although the Council believes that good faith consultation requires that an agency make reasonable efforts to avoid foreclosing options while the Council's comments are being sought. As drafted, § 800.7 applies only to those resources discovered during construction that meet the National Register Criteria. Agencies that discover National Register eligible properties during construction are required to comply with the provisions of the Archeological and Historic Preservation Act of 1974. The Council is adopting, as the standard for Section 106 compliance, mitigation acceptable to the Secretary of the Interior under the provisions of the Archeological and Historic Preservation Act. Therefore, an agency will be deemed to have met its responsibilities to afford the Council an opportunity to comment if it complies with the provisions of the Archeological and Historic Preservation Act, unless the Secretary determines that certain aspects of the undertaking warrant Council consideration. If Council consideration is determined to be necessary, a 30-day time limit has been placed on the transmittal of comments. The Council believes that this provision will serve to reduce time delays and effectively protect the resource.

SECTION 800.8 PROGRAMMATIC MEMORANDUM OF AGREEMENT

This section was developed as a means of allowing the Council to comment on a particular program or class of actions that would otherwise require multiple individual requests for comments under the regulations. This will expedite the review process and eliminate individual reviews of undertakings that are repetitive in nature. For example, the Council has executed a programmatic agreement with the National Park Service concerning the Park planning system. Under the terms of the agreement, individual actions taken to implement a master plan for a particular park that has previously been reviewed by the Council will normally not be subjected to further Council review.

A number of commenters suggested that the process include the State Historic Preservation Officers in States affected by such an agreement or the National Conference of State Historic Preservation Officers when the agreement is nationwide in scope. The regulations have been revised to specifically allow for such participation. Other changes have been made in the section to clarify ambiguities pointed out by a number of commenters.

SECTION 800.9 COORDINATION WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

This section sets forth the manner in which the review conducted under Section 106 should be coordinated with that required by the National Environmental Policy Act. This section elaborates on § 800.2 of the 1974 regulations and has been developed in consultation with the staff of the Council on Environmental Quality. It is the intention of the two agencies to issue joint supplementary guidance on this subject in the near future. The purpose of the section is to combine to the maximum extent possible the information on resources, evaluation of effects, and analysis of alternatives required by the separate statutes. For most projects, the Council's comments should be requested during the preparation of the draft environmental impact statement. Some commenters noted several classes of Federal projects which cannot be coordinated in this manner. The regulations have been revised to specifically provide for this situation. It is the Council's objective to provide its comments on an agency undertaking that requires an environmental impact statement in time to be included in the final statement. This should result in less paperwork and reduce delays in fulfilling agency environmental review responsibilities by allowing a single document to be used to meet the information requirements of both statutes.

SECTION 800.10 COORDINATION WITH THE PRESIDENT'S MEMORANDUM ON ENVIRONMENTAL QUALITY AND WATER RESOURCES MANAGEMENT

This section recapitulates the mandates contained in the Memorandum to agencies with water resources responsibilities to develop regulations to implement the Council's Section 106 regulations. A number of commenters requested the Council to add requirements for additional review of the required regulations and to develop stringent standards for the regulations. The Council will issue guidance to agencies to develop such regulations.

SECTION 800.11 COUNTERPART REGULATIONS

This section has been revised to allow Federal agencies greater flexibility in implementing the procedural requirements of these regulations. Section 800.11 as proposed in the draft amendments dealt briefly with the development of agency procedures under Section 1(3) of Executive Order 11593. The revised section was developed from suggestions received from several Federal agencies. Under this section, an agency may choose to develop counterpart regulations that can be tailored to meet the specific requirements of its planning and decision making processes. Section 800.11 would permit agencies to develop counterpart regulations for meeting their responsibilities under Section 800.4. This section requires that the regulations be jointly drafted with the Executive Director and approved by the Chairman and provides an opportunity for public participation.

SECTION 800.12 INVESTIGATION OF THREATS TO NATIONAL REGISTER AND ELIGIBLE PROPERTIES

This section deals with situations where the Council has reason to believe that a Federal undertaking affecting a National Register or eligible property has not been reviewed in accordance with these regulations. Several clarifications were made to this section in response to specific comments. Some Federal agencies expressed a desire that the Council use discretion in investigating such threats. The Council intends to do so. Previously, these provisions were included in § 800.13(b). In the draft of the proposed amendments § 800.13(a) included a provision for comment or report on non-Federal undertakings. This section has been deleted because it is based on the Council's general advisory authorities under Section 202 of the Act and not on Section 106. The Council will continue to exercise its general advisory authority under Section 202 and will consider matters in the public interest.

Section 800.13 Reports to the Council

This section sets standards for information that should be provided to the Council to enable it to make informed comments on Federal undertakings. Sections 800.13(a) and (b) were previously included in the Supplementary Guidelines section. A large number of commenters requested that these standards for adequate documentation be codified. The Council agrees with these comments and believes that codifying these sections will make the requirements clear to all the consulting parties and the public. Section 800.13(c) dealing with Reports for Council Meetings includes a new section prescribing the Secretary of the Interior's Report. This section requests the Secretary to verify existing information on the historical or cultural significance of a National Register or eligible property and reflects the current practice of the Council. A number of commenters felt that the section was not entirely clear concerning how reports for Council meetings should be coordinated. The section has been re-drafted to respond to these comments.

Section 800.14 Supplementary Guidance

This is a new section which provides that the Executive Director may issue further guidance to interpret certain portions of the regulations.

Section 800.15 Public Participation

This is a new section which is designed to encourage public participation throughout the process established by the regulations. A number of comments urged that the regulations contain more explicit direction concerning the means of involving the public. Several suggested that such reference to public participation be included in various specific sections. The Council believes that a specific section dealing with public participation will best serve to fulfill the intended purpose of involving the public. The Council notes that its process is advisory and does not constitute formal administrative hearings. Therefore, this section is intended for guidance and is not to be construed as setting a strict legal standard. For example, the use of the word "notice" in subsection (b) is not intended to be a formal legal requirement, but rather a means of informing the public of an opportunity to participate in the process.

Other

The Supplementary Guidelines contained in the publication of the draft amendments have been deleted. Supplementary Guidelines II and IV have been codified as part of § 800.13. Supplementary Guideline I, the Criteria of the National Register of Historic Places, is contained in 36 CFR 60.6. Supplementary Guideline III, Determinations of No Effect and No Adverse Effect for Archeological Resources, will not be published at the present time. The Council's Task Force on Archeology will be considering this guideline and it will be revised based upon recommendations of the Task Force. This Guideline received numerous comments and they have been provided to the Task Force for its consideration.

Conclusion

The Council made a conscientious effort to incorporate all valid comments in these final amendments. As noted, revisions have been made to the regulations which we believe will serve to make the Section 106 commenting process an open and public process that can be tailored to the needs of individual agencies. The Council believes that the regulations set a clear standard for agencies to follow in meeting their Section 106 responsibilities, while being sufficiently flexible to respond to the wide variety of agency programs and needs.

The Council has determined that these amendments are not significant regulations within the meaning of Executive Order 12044 and consequently do not require a regulatory analysis. The purpose of these amendments is to simplify existing regulations and to clarify language in conformance with the goals enunciated by Executive Order 12044.

The Council has determined that an Environmental Impact Statement under the National Environmental Policy Act is not required.

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Part 800 is revised to read as set forth below:

PART 800—PROTECTION OF HISTORIC AND CULTURAL PROPERTIES

Sec.
800.1 Purpose and authorities.
800.2 Definitions.
800.3 Criteria of effect and advance effect.

Review of Individual Undertakings

800.4 Federal Agency Responsibilities.
800.5 State Historic Preservation Officer Responsibilities.
800.6 Council comments.
800.7 Resources discovered during construction.

Federal Program Coordination

800.8 Programmatic Memorandum of Agreement.
800.9 Coordination with the National Environmental Policy Act (42 U.S.C. 4321 et seq.)
800.10 Coordination with the Presidential Memorandum on environmental quality and water resources management.
800.11 Counterpart regulations.

Other Provisions

800.12 Investigation of threats to historic properties.
800.13 Reports to the Council.
800.14 Supplementary guidance.
800.15 Public participation.

Authority: Pub. L. 89-665, 80 Stat. 915 (16 U.S.C. 470), as amended, 84 Stat. 204 (1970), 87 Stat. 139 (1973), 90 Stat. 1320 (1976), 92 Stat. 3467 (1978); E.O. 11593, 3 CFR 1971 Comp. p. 154; President's Memorandum on Environmental Quality and Water Resources Management, July 12, 1978.

§ 800.1 Purpose and authorities.

(a) The National Historic Preservation Act of 1966, as amended, established the Advisory Council on Historic Preservation as an independent agency of the United States to advise the President and the Congress on historic preservation matters, recommend measures to coordinate Federal historic preservation activities, and comment on Federal actions affecting properties included in or eligible for inclusion in the National Register of Historic Places. Its members are the Secretary of the Interior, the Secretary of Housing and Urban Development, the Secretary of Commerce, the Administrator of General Services, the Secretary of the Treasury, the Attorney General, the Secretary of Agriculture, the Secretary of Transportation, the Secretary of State, the Secretary of Defense, the Secretary of Health, Education, and Welfare, the Chairman of the Council on Environmental Quality, the Chairman of the Federal Council on the Arts and Humanities, the Architect of the Capitol, the Secretary of the Smithsonian Institution, the Chairman of the National Trust for Historic Preservation, the President of the National Conference of State Historic Preservation Officers, and 12 citizen members from outside the Federal Government appointed for five-year terms by the President on the basis of their interest and experience in the matters to be considered by the Council.

(b) The Council protects properties of historical, architectural, archeological, and cultural significance at the national, State, and local level by reviewing and commenting on Federal actions affecting National Register and eligible properties in accordance with the following authorities:

(1) Section 106 of the National Historic Preservation Act. Section 106 requires that Federal agencies with direct or indirect jurisdiction over a Federal, federally assisted or federally licensed undertaking afford the Council a reasonable opportunity for comment on such undertakings that affect properties included in or eligible for inclusion in the National Register of Historic Places prior to the agency's approval of any such undertaking.

(2) Section 1(3) of Executive Order 11593, May 13, 1971, "Protection and Enhancement of the Cultural Environment." Section 1(3) requires that Federal agencies, in consultation with the Council, institute procedures to assure that their plans and programs contribute to the preservation and enhancement of non-federally owned historic and cultural properties.

(3) Section 2(b) of Executive Order 11593, May 13, 1971, "Protection and Enhancement of the Cultural Environment." Federal agencies are required by Section 2(a) of the Executive Order to locate, inventory, and nominate properties under their jurisdiction or control to the National Register. Until such processes are complete, Federal agencies must provide the Council an opportunity to comment on proposals for the transfer, sale, demolition, or substantial alteration of federally owned properties eligible for inclusion in the National Register.

(4) The President's Memorandum on Environmental Quality and Water Resources Management. The Memorandum directs the Council to issue final regulations under the National Historic Preservation Act by March 1, 1979, and further directs Federal agencies with water resource responsibilities and programs to publish procedures implementing the Act not later than three months after promulgation of final regulations by the Council. Federal agencies' procedures are to be reviewed and, if they are consistent with the Council's regulations, approved by the Council within 60 days and published in final form.

§ 800.2 Definitions.

As used in these regulations:

(a) "National Historic Preservation Act" means Pub. L. 89-665, approved October 15, 1966, an "Act to establish a program for the preservation of additional historic properties throughout the Nation and for other purposes" (80 Stat. 915, 16 U.S.C. 470, as amended: 84 Stat. 204 (1970), 87 Stat. 139 (1973), 90 Stat. 1320 (1976), 92 Stat. 3467 (1978)), hereinafter referred to as "the Act."

(b) "Executive Order" means Executive Order 11593, May 13, 1971, "Protection and Enhancement of the Cultural Environment" (36 FR 8921, 16 U.S.C. 470).

(c) "Undertaking" means any Federal, federally assisted or federally licensed action, activity, or program or the approval, sanction, assistance, or support of any non-Federal action, activity, or program. Undertakings include new and continuing projects and program activities (or elements of such activities not previously considered under Section 106 or Executive Order 11593) that are: (1) Directly undertaken by Federal agencies; (2) supported in whole or in part through Federal contracts, grants, subsidies, loans, loan guarantees, or other forms of direct and indirect funding assistance; (3) carried out pursuant to a Federal lease, permit, license, certificate, approval, or other form of entitlement or permission; or, (4) proposed by a Federal agency for Congressional authorization or appropriation. Site-specific undertakings affect areas and properties that are capable of being identified at the time of approval by the Federal agency. Non-site-specific undertakings have effects that can be anticipated on National Register and eligible properties but cannot be identified in terms of specific geographical areas or properties at the time of Federal approval. Non-site-specific undertakings include Federal approval of State plans pursuant to Federal legislation, development of comprehensive or area-wide plans, agency recommendations for legislation and the establishment or modification of regulations and planning guidelines.

(d) "National Register" means the National Register of Historic Places. It is a register of districts, sites, buildings, structures, and objects of national, State, or local significance in American history, architecture, archeology, and culture that is expanded and maintained by the Secretary of the Interior under authority of section 2(b) of the Historic Sites Act of 1935 (49 Stat. 666, 16 U.S.C. 461) and Section 101(a)(1) of the National Historic Preservation Act implemented through 36 CFR Part 60. The National Register is published in its entirety in the FEDERAL REGISTER each year in February. Addenda are usually published on the first Tuesday of each month.

(e) "National Register property" means a district, site, building, structure, or object included in the National Register.

(f) "Eligible property" means any district, site, building, structure, or object that meets the National Register Criteria.

(g) "National Register Criteria" means the criteria established by the Secretary of the Interior to evaluate properties to determine whether they are eligible for inclusion in the National Register. (See 36 CFR 60.6.)

(h) "Decision" means the exercise of or the opportunity to exercise discretionary authority by a Federal agency at any stage of an undertaking where alterations might be made in the undertaking to modify its impact upon National Register and eligible properties.

(i) "Agency Official" means the head of the Federal agency having responsibility for the undertaking or a designee authorized to act for the Agency Official.

(j) "Council" means the Advisory Council on Historic Preservation as established by Title II of the Act.

(k) "Chairman" means the Chairman of the Advisory Council on Historic Preservation or a member designated to act for the Chairman.

(l) "Executive Director" means the Executive Director of the Advisory Council on Historic Preservation as established by Section 205 of the Act, or a designee authorized to act for the Executive Director.

(m) "State Historic Preservation Officer" means the official, who is responsible for administering the Act within the State or jurisdiction, or a designated representative authorized to act for the State Historic Preservation Officer. These officers are appointed pursuant to 36 CFR Part 61.2 by the Governors of the 50 States, Guam, American Samoa, the Commonwealth of Puerto Rico, the Virgin Islands, the Trust Territory of the Pacific Islands, the Commonwealth of the Mariana Islands, and the Mayor of the District of Columbia.

(n) "Secretary" means the Secretary of the Interior or a designee authorized to carry out the historic preservation responsibilities of the Secretary under the Act, Executive Order 11593, and related authorities.

(o) "Area of the undertaking's potential environmental impact" means that geographical area within which direct and indirect effects generated by the undertaking could reasonably be expected to occur and thus cause a change in the historical, architectural, archeological, or cultural qualities possessed by a National Register or eligible property. The boundaries of such area should be determined by the Agency Official in consultation with the State Historic Preservation Officer as early as possible in the planning of the undertaking.

(p) "Consulting parties" means the Agency Official, the State Historic Preservation Officer, and the Executive Director.

§ 800.3 Criteria of effect and adverse effect.

The following criteria shall be used to determine whether an undertaking has an effect or an adverse effect in accordance with these regulations.

(a) *Criteria of Effect.* The effect of a Federal, federally assisted or federally licensed undertaking on a National Register or eligible property is evaluated in the context of the historical, architectural, archeological, or cultural significance possessed by the property. An undertaking shall be considered to have an effect whenever any condition of the undertaking causes or may cause any change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural characteristics that qualify the property to meet the criteria of the National Register. An effect occurs when an undertaking changes the integrity of location, design, setting, materials, workmanship, feeling, or association of the property that contributes to its significance in accordance with the National Register criteria. *An* effect may be direct or indirect. Direct effects are caused by the undertaking and occur at the same time and place. Indirect effects include those caused by the undertaking that are later in time or farther removed in distance, but are still reasonably foreseeable. Such effects may include changes in the pattern of land use, population density or growth rate that may affect on properties of historical, architectural, archeological, or cultural significance.

(b) *Criteria of Adverse Effect.* Adverse effects on National Register or eligible properties may occur under conditions which include but are not limited to:

(1) Destruction or alteration of all or part of a property;

(2) Isolation from or alteration of the property's surrounding environment;

(3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;

(4) Neglect of a property resulting in its deterioration or destruction.

(5) Transfer or sale of a property without adequate conditions or restrictions regarding preservation, maintenance, or use.

REVIEW OF INDIVIDUAL UNDERTAKINGS

§ 800.4 Federal Agency responsibilities.

As early as possible before an agency makes a final decision concerning an undertaking and in any event prior to taking any action that would foreclose alternatives or the Council's ability to comment, the Agency Official shall take the following steps to comply with the requirements of Section 106 of the National Historic Preservation Act and Section 2(b) of Executive Order 11593. It is the primary responsibility of each Agency Official requesting Council comments to conduct the appropriate studies and to provide the information necessary for an adequate review of the effect a proposed undertaking may have on a National Register or eligible property, as well as the information necessary for adequate consideration of modifications or alterations to the proposed undertaking that could avoid, mitigate, or minimize any adverse effects. It is the responsibility of each Agency Official requesting consultation with a State Historic Preservation Officer under this section to provide the information that is necessary to make an informed and reasonable evaluation of whether a property meets National Register criteria and to determine the effect of a proposed undertaking on a National Register or eligible property. Although a Federal agency may require non-Federal parties to undertake certain steps required by these regulations as a prerequisite to Federal action and may authorize non-Federal participation under this section and in the consultation process under Section 800.6 pursuant to approved counterpart regulations, the ultimate responsibility for compliance with these regulations remains with the Federal agency and cannot be delegated by it.

(a) *Identification of National Register and Eligible Properties.* It is the responsibility of each Federal agency to identify or cause to be identified any National Register or eligible property that is located within the area of the undertaking's potential environmental impact and that may be affected by the undertaking.

(1) The Agency Official shall consult the State Historic Preservation Officer, the published lists of National Register and eligible properties, public records, and other individuals or organizations with historical and cultural expertise, as appropriate, to determine what historic and cultural properties are known to be within the area of the undertaking's potential environmental impact. The State Historic Preservation Officer should provide the Agency Official with any information available on known historic and cultural properties identified in the area (whether on the National Register or not), information on any previous surveys performed and an evaluation of their quality, a recommendation as to the need for a survey of historic and cultural properties, and recommendations as to the type of survey and/or survey methods should a survey be recommended, and recommendations on boundaries of such surveys.

(2) The Agency Official shall, after due consideration of the information obtained pursuant to § 800.4(a)(1), determine what further actions are necessary to discharge the agency's affirmative responsibilities to locate and identify eligible properties that are within the area of the undertaking's potential environmental impact and that may be affected by the undertaking. Such actions may include a professional cultural resource survey of the environmental impact area, or parts of the area, if the area has not previously been adequately surveyed. The recommendations of the State Historic Preservation Officer should be followed in this matter.

(3) The Agency Official, in consultation with the State Historic Preservation Officer, shall apply the National Register criteria to all properties that may possess any historical, architectural, archeological, or cultural value located within the area of the undertaking's potential environmental impact. If either the Agency Official or the State Historic Preservation Officer finds that a property meets the National Register Criteria or a question exists as to whether a property meets the Criteria, the Agency Official shall request a determination of eligibility from the Secretary of the Interior in accordance with 36 CFR Part 63. The opinion of the Secretary respecting the eligibility of a property shall be conclusive for the purposes of these regulations. If the Agency Official and the State Historic Preservation Officer agree that no identified property meets the Criteria, the Agency Official shall document this finding and, unless the Secretary has otherwise made a determination of eligibility under 36 CFR Part 63, may proceed with the undertaking.

(4) The Agency Official shall complete the preceding steps prior to requesting the Council's comments pursuant to Section 800.4(b)–(d). The Agency Official may, however, initiate a request for the Council's comments simultaneously with a request for a determination of eligibility from the Secretary when the Agency Official and the State Historic Preservation Officer agree that a property meets the National Register Criteria. Before the Council completes action pursuant to § 800.6, the Secretary must find the property eligible for inclusion in the National Register.

(b) *Determination of Effect.* For each National Register or eligible property that is located within the area of the undertaking's potential environmental impact, the Agency Official, in consultation with the State Historic Preservation Officer, shall apply the Criteria of Effect, (§ 800.3(a)), to determine whether the undertaking will have an effect upon the historical, architectural, archeological, or cultural characteristics of the property that qualified it to meet National Register Criteria.

(1) *No Effect.* If the Agency Official, in consultation with the State Historic Preservation Officer, finds that the undertaking will not affect these characteristics, the undertaking may proceed. The Agency Official shall document each Determination of No Effect, which shall be available for public inspection. If the State Historic Preservation Officer objects or other timely objection is made to the Executive Director to an Agency Official's Determination of No Effect, the Executive Director may review the Determination and advise the Agency Official, the State Historic Preservation Officer and any objecting party of the findings within 15 days.

(2) *Effect determined.* If the Agency Official or the Executive Director finds that the undertaking will have an effect upon these characteristics, the Agency Official, in consultation with the State Historic Preservation Officer, shall apply the Criteria of Adverse Effect, set forth in section 800.3(b), to determine whether the effect of the undertaking may be adverse.

(c) *Determinations of no adverse effect.* If the Agency Official, in consultation with the State Historic Preservation Officer, finds the effect on the historical, architectural, archeological, or cultural characteristics of the property not to be adverse, the Agency Official shall forward adequate documentation (See § 800.13(a)) of the Determination, including written evidence of the views of the State Historic Preservation Officer, to the Executive Director for review in accordance with Section 800.6. If the State Historic Preservation Officer fails to respond to an Agency Official's request as provided in Section 800.5, the Agency Official shall include evidence of having contacted the State Historic Preservation Officer.

(d) *Adverse effect determination.* If the Agency Official finds the effect on the historical, architectural, archeological, or cultural characteristics of the property to be adverse, or if the Executive Director does not accept an Agency Official's Determination of No Adverse Effect pursuant to review under Section 800.6, the Agency Official shall:

(1) Prepare and submit a Preliminary Case Report requesting the comments of the Council (See § 800.13(b)),

(2) Notify the State Historic Preservation Officer of this request, and

(3) Proceed with the consultation process set forth in § 800.6.

(e) *Suspense of action.* Until the Council issues its comments under these regulations, good faith consultation shall preclude a Federal agency from taking or sanctioning any action or making any irreversible or irretrievable commitment that could result in an adverse effect on a National Register or eligible property or that would foreclose the consideration of modifications or alternatives to the proposed undertaking that could avoid, mitigate, or minimize such adverse effects.

§ 800.5 State Historic Preservation Officer responsibilities.

(a) The State Historic Preservation Officer should participate in the review process established by these regulations whenever it concerns an undertaking located within the State Historic Preservation Officer's jurisdiction.

(b) Unless a longer time is agreed to by the Agency Official, the failure of a State Historic Preservation Officer to respond to an Ageny Official's request for consultation under Section 800.4 within 30 days after receipt shall not prohibit the Agency Official from proceeding with the review process under these regulations.

(c) The State Historic Preservation Officer, with the Agency Official and the Executive Director, should participate in any consultation under § 800.6(b) and sign any Memorandum of Agreement developed under § 800.6(c) of these regulations. Failure of a State Historic Preservation Officer to participate in a consultation under § 800.6(b) or to sign a Memorandum of Agreement as provided in § 800.6(c)(1) within 30 days of receipt without notifying the Executive Director and the Agency Official that the State Historic Preservation Officer disagrees with the terms of the Agreement shall not prohibit the Executive Director and the Agency Official from concluding the Agreement and having it ratified by the Chairman in accordance with § 800.6(c)(2).

§ 800.6 Council comments.

The following subsections specify how the Council will respond to Federal agency requests for the Council's comments required to satisfy an agency's responsibilities under Section 106 of the Act and Section 2(b) of the Executive Order.

(a) *Response to determinations of no adverse effect.* (1) Upon receipt of a Determination of No Adverse Effect from an Agency Official, the Executive Director will review the Determination and supporting documentation. Normally, the Executive Director will concur without delay. If the documentation is not adequate, the Executive Director will so inform the Agency Official within 15 days. Unless the Executive Director objects to the Determination within 30 days after receipt of an adequately documented Determination, the Agency Official will be considered to have satisfied the agency's responsibilities under Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations, and may proceed with the undertaking.

(2) If the Executive Director objects to a Determination of No Adverse Effect, the Executive Director shall specify the basis for the objection and may specify conditions which will eliminate the objection. As appropriate, the Executive Director may consult the Agency Official, the State Historic Preservation Officer, and other interested parties in specifying conditions. If the Agency Official accepts the conditions in writing, the conditions will be incorporated into the agency's Determination and the Executive Director's objection will be withdrawn. The Agency Official then will be considered to have satisfied the agency's responsibilities under Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations, and may proceed with the undertaking.

(3) If the Agency Official does not accept the Executive Director's conditions or if the Executive Director objects to a Determination of No Adverse Effect without specifying conditions that would remove the objection, the Executive Director shall initiate the consultation process pursuant to § 800.6(b).

(b) *Consultation Process.* The Agency Official, the State Historic Preservation Officer, and the Executive Director shall be the consulting parties to consider feasible and prudent alternatives to the undertaking that could avoid, mitigate, or minimize adverse effects on a National Register or eligible property. When an undertaking involves more than one Federal agency, these agencies may, upon notification to the Executive Director, coordinate their consultation responsibilities through a single lead agency. Grantees, permittees, licensees, or other parties in interest, and representatives of national, State, or local units of government and public and private organizations, may be invited by the consulting parties to participate in the consultation process.

(1) *Preliminary Case Report.* The Agency Official shall provide copies of the report to the consulting parties at the initiation of the consultation and make it readily available for public inspection.

(2) *On-site inspection.* At the request of any of the consulting parties, the Agency Official shall conduct an on-site inspection.

(3) *Public Information Meeting.* At the request of any of the consulting parties, the Executive Director shall conduct a meeting open to the public, where representatives of national, State, or local units of government, representatives of public or private or-

nizations, and interested citizens ay receive information and express eir views on the undertaking, its ef- cts on the National Register or eligi- e property, and alternate courses of tion that could avoid, mitigate, or inimize any adverse effects on such operties. The Agency Official shall ovide adequate facilities for the eeting near the site of the undertak- g and shall afford appropriate notice the public, generally at least 15 ays in advance of the meeting.

(4) *Consideration of Alternatives.* pon review of the proposed under- king and after any on-site inspection public information meeting, the nsulting parties shall determine hether there are feasible and pru- ent alternatives to avoid the adverse fects on National Register or eligible roperty. If the consulting parties annot agree on an alternative to void, they shall consult further to de- rmine if there are alternatives that ould satisfactorily mitigate the ad- erse effects.

(5) *Avoidance or Satisfactory Miti- ation of Adverse Effect.* If the con- ulting parties agree upon a feasible nd prudent alternative to avoid or atisfactorily mitigate the adverse ef- ects of the undertaking on the Na- onal Register or eligible property, ey shall execute a Memorandum of greement in accordance with 800.6(c) specifying how the undertak- g will proceed to avoid or mitigate he adverse effect.

(6) *Acceptance of Adverse Effect.* If he consulting parties determine that here are no feasible and prudent al- ernatives that could avoid or satisfac- orily mitigate the adverse effects and gree that it is in the public interest to roceed with the proposed undertak- ng, they shall execute a Memoran- um of Agreement in accordance with 800.6(c) acknowledging this determi- ation and specifying any recording, alvage, or other measures to minimize he adverse effects that shall be taken efore the undertaking proceeds.

(7) *Failure to Agree.* Upon the failure f the consulting parties to agree upon he terms for a Memorandum of Agreement, or upon notice of such ailure by any of the consulting parties to the Executive Director, the Executive Director shall notify the Chairman within fifteen days and hall recommend whether or not the matter should be scheduled for consideration at a Council meeting. The Agency Official and the State Historic Preservation Officer shall be notified in writing of the Executive Director's recommendation.

(c) *Memorandum of Agreement*—(1) *Preparation of Memorandum of Agreement.* It shall be the responsibility of the Executive Director to prepare each Memorandum of Agreement required under these regulations. Unless otherwise requested by the Executive Director, the Agency Official shall prepare a proposal for inclusion in the Agreement that details the actions agreed upon by the consulting parties to be taken to avoid, satisfactorily mitigate, or accept the adverse effects on the property. The State Historic Preservation Officer's written concurrence shall be included in this proposal by the Agency Official. If the Executive Director determines that the proposal represents the agreement of the consulting parties, he shall within 10 days forward it as a Memorandum of Agreement to the Chairman for ratification pursuant to § 800.6(c)(2). If the Executive Director determines that the proposal does not adequately represent the agreement reached by the consulting parties, it may be returned to the Agency Official, or a Memorandum of Agreement revising the proposal may be submitted to the Agency Official and the State Historic Preservation Officer. As appropriate other parties in interest may be invited by the consulting parties to indicate their concurrence with the proposal or to be a signatory to the Agreement.

(2) *Review of Memorandum of Agreement.* Upon receipt of an executed Memorandum of Agreement, the Chairman shall institute a 30-day review period. Unless the Chairman notifies the Agency Official that the matter has been placed on the agenda for consideration at a Council meeting, the Agreement shall become final when ratified by the Chairman or upon the expiration of the 30-day review period with no action taken. Copies will be provided to signatories and notice of executed Memoranda of Agreement shall be published in the FEDERAL REGISTER. The Memorandum of Agreement should be included in the final environmental impact statement prepared pursuant to the National Environmental Policy Act.

(3) *Effect of Memorandum of Agreement.* Agreements duly executed in accordance with these regulations shall constitute the comments of the Council and shall evidence satisfaction of the Federal agency's responsibilities for the proposed undertaking under Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations. Failure to carry out the terms of a Memorandum of Agreement requires that the Federal agency again request the Council's comments in accordance with these regulations. In such instances, until the Council issues its comments under these regulations the Agency Official shall not take or sanction any action or make any irreversible or irretrievable commitment that could result in an adverse effect with respect to National Register or eligible properties covered by the Agreement or that would foreclose the Council's consideration of modifications or alternatives to the proposed undertaking that could avoid or mitigate the adverse effect.

(4) *Amendment of a Memorandum of Agreement.* If a signatory determines that the terms of the Memorandum of Agreement cannot be met or believes a change is necessary, the signatory shall immediately request the consulting parties to consider an amendment of the Agreement. Amendments will be executed in the same manner as the original Agreement.

(5) *Report on Memorandum of Agreement.* Within 90 days after carrying out the terms of the Agreement, the Agency Official shall report to all signatories on the actions taken.

(d) *Council Meetings.* The Council does not hold formal administrative hearings to develop its comments under these regulations. Reports and statements will be presented to the Council in open session in accordance with a prearranged agenda. Regular meetings of the Council generally occur quarterly.

(1) *Response to Recommendation for Consideration at Council Meeting.* Upon receipt of a notice and recommendation from the Executive Director concerning consideration of a proposed undertaking at a Council meeting, the Chairman shall determine within 15 days whether or not the undertaking will be considered and shall notify the Executive Director, the Agency Official, and the State Historic Preservation Officer of his decision. The Agency Official shall and the State Historic Preservation Officer should provide such reports and information as may be required to assist the Chairman in this determination.

If the Chairman decides against consideration of the undertaking at a Council meeting, a written summary of the undertaking, any recommendations for action by the Federal agency, and the decision shall be sent to each member of the Council. The Chairman shall also notify the Agency Official and the State Historic Preservation Officer and other parties in interest of the decision. If three members of the Council object within 10 days of the Chairman's decision, the undertaking shall be scheduled for consideration at a Council meeting. Unless three members of the Council object, the chairman shall notify the Agency Official, the State Historic Preservation Officer, and other parties in interest in writing that the undertaking may proceed. Such notice shall be evidence of satisfaction of the Federal agency's responsibilities for the proposed undertaking under Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations.

(2) *Decision to Consider the Undertaking.* When the Council will consider an undertaking at a meeting, the Chairman shall either designate five members as a panel to hear the matter on behalf of the full Council, or schedule the matter for consideration by the full Council.

(i) A panel shall consist of three non-Federal members, one as Chairman; and two Federal members, neither of whom shall represent the Federal agency involved in the undertaking. The panel shall meet to consider the undertaking within 30 days of the Chairman's decision unless the Agency Official agrees to a longer time.

(ii) The full Council will consider an undertaking at the next regularly scheduled meeting and no less than 60 days from the date of the Chairman's decision. In exceptional cases the Chairman may schedule the matter for consideration at a special meeting of the full Council to be held less than 60 days from the date of the decision.

(iii) Prior to any panel or full Council consideration of a matter, the Chairman will notify the Agency Official and the State Historic Preservation Officer, and other parties in interest of the date on which the undertaking will be considered. The Executive Director, the Agency Official, and the State Historic Preservation Officer shall prepare reports in accordance with § 800.13. Reports required from the Agency Official and the State Historic Preservation Officer must be received, by the Executive Director at least 21 days before any meeting. Failure by the Federal agency to submit its report may result in postponement of consideration of the undertaking.

(3) *Meeting Notice.* Generally, 21 days notice of all meetings involving Council review of undertakings in accordance with these regulations shall be given by publication in the FEDERAL REGISTER. In exceptional cases, no less than 7 days notice shall be given by publication in the FEDERAL REGISTER.

(4) *Statements to the Council.* An agenda shall provide for oral statements from the Executive Director; the Agency Official; other parties in interest; the Secretary of the Interior; the State Historic Preservation Officer; representatives of national, State, or local units of government, and interested public and private organizations and individuals. Parties wishing to make oral remarks should notify the Executive Director at least two days in advance of the meeting. Parties wishing to have their statements distributed to Council members prior to the meeting should send copies of the statements to the Executive Director at least 7 days in advance.

(5) *Comments of the Council.* The written comments of the Council will be issued within 15 days after a meeting. Comments shall be made to the head of the Federal agency requesting comment or having responsibility for the undertaking. Immediately after the comments are made to the Federal agency, the comments of the Council will be forwarded to the President and Congress as a special report under authority of Section 202(b) of the Act and a notice of availability will be published in the FEDERAL REGISTER. The comments of the Council shall be available to the State Historic Preservation Officer, other parties in interest, and the public upon receipt of the comments by the head of the Federal Agency. The comments of the Council should be included in the final environmental impact statement prepared pursuant to the National Environmental Policy Act.

(6) *Review of Panel Decision.* Upon receipt of the panel's comments after a meeting, the head of the Federal agency shall take these comments into account in reaching a decision in regard to the proposed undertaking. If the agency determines not to follow the panel's comments, the Agency Official shall immediately provide written notice of this decision to the Council. The Chairman may convene a meeting of the full Council to consider the matter within 30 days of receipt of such notice. In the interim period the Agency Official shall not take or sanction any action or make any irreversible or irretrievable commitment that could result in an adverse effect on the National Register or eligible property or that would foreclose the Council's consideration of modifications or alternatives to the proposed undertaking that could avoid or mitigate the adverse effect. If the Chairman decides against consideration of the proposed undertaking, the consulting parties shall be immediately notified and the undertaking may proceed.

(7) *Agency Action in Response to Council Comments.* Upon receipt of the Council's comments after a meeting, the head of the Federal agency shall take these comments into account in reaching a final decision in regard to the proposed undertaking. When a final decision regarding the proposed undertaking is reached by the Federal agency, the Agency Official shall submit a written report to the Council describing the actions taken by the Federal Agency in response to the Council's comments; the actions taken by other parties pursuant to the actions of the Federal Agency; and the effect that such actions will have on the affected National Register or eligible property. Receipt of this Report by the Chairman shall be evidence that the agency has satisfied its responsibilities for the proposed undertaking under Section 106 of the Act, Section 2(b) of the Executive Order and these regulations. The Council may issue a final report to the President and Congress under authority of Section 202(b) of the Act describing the actions taken by the agency in response to the Council's comments including recommendations for changes in Federal policy and programs, as appropriate.

(8) *Continuing Review Jurisdiction.* When the Council has met and commented upon an undertaking that will require subsequent site-specific undertakings by a Federal agency, the Council's comment extends only to the undertaking as reviewed. The Agency Official shall ensure that subsequent actions related to the undertaking that have not been considered by the Council will be submitted to the Council for review in accordance with these regulations.

§ 800.7 Resources discovered during construction.

(a) *Federal Agency Responsibilities.* If a Federal agency has previously met its responsibilities for identified National Register and eligible properties under Section 106 of the Act, Section 2(b) of the Executive Order, these regulations, and the National Environmental Policy Act (42 U.S.C. 4321 et seq.), and an Agency Official finds or is notified after contruction has started that an undertaking will have an effect on a previously unidentified National Register or eligible property, the Federal agency may fulfill its responsibilities under Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations, by complying with the requirements of the Archeological and Historic Preservation Act (16 U.S.C. 469(a)) as implemented by the Secretary, unless the Secretary determines that the significance of the property, the effect, and any proposed mitigation actions warrant Council consideration. If the Secretary determines the Council's comments are warranted, the Agency Official shall request the comments of the Council.

(b) *Council Comments.* Within 30 days of receipt of a request for comments from an Agency Official under this section, the Executive Director, with the concurrence of the Chairman, shall transmit comments on behalf of the Council to the Agency Official or the Chairman shall convene a meeting of the Council pursuant to § 800.6.

FEDERAL PROGRAM COORDINATION

§ 800.8 Programmatic Memoranda of Agreement.

(a) *Application.* At the request of an Agency Official, the Council will consider execution of a Programmatic Memorandum of Agreement to fulfill an agency's responsibilities under Section 106 of the Act and Section 2(b) of the Executive Order for a particular program or class of undertakings that would otherwise require numerous individual requests for comments under these regulations. Within 30 days after the request, the Executive Director will notify the agency official whether a Programmatic Memoranda of Agreement may be used. Generally, Programmatic Memorandum of Agreement may be used in the following types of situations:

(1) Non-site-specific undertakings, including Federal approval of State plans pursuant to Federal legislation, development of comprehensive or area-wide plans, agency recommendations for legislation, and the establishment or modification of regulations and planning guidelines.

(2) Undertakings that are repetitive in nature and have essentially the same effect on National Register or eligible properties.

(3) Programs that are designed to further the preservation and enhancement of National Register or eligible properties.

(4) Programs with statutory time limits for project application and approval that would not permit compliance with these regulations in the normal manner.

(b) *Consultation Process.* Upon determination by the Executive Director that a Programmatic Memorandum of Agreement is appropriate, the Agency Official and the Executive Director shall consult to develop a Programmatic Memorandum of Agreement. When the Agreement will affect a particular State or States, the appropriate State Historic Preservation Officer may be a party to the consultation. When the Agreement involves issues national in scope, the President of the National Conference of State Historic Preservation Officers or a designated representative may be a party to the consultation. The Executive Director may invite other parties, including other Federal agencies with responsibilities which may be affected by the Agreement, to participate in the consultation and may hold a Public Information Meeting (see § 800.6(b)(3)) on the proposed Agreement.

(c) *Preparation of the Agreement.* It shall be the responsibility of the Executive Director to prepare each Agreement. At least 30 days before executing an Agreement, the Council shall publish notice of the proposed Agreement in the FEDERAL REGISTER inviting comments from Federal, State, and local agencies and the public. The Council will make copies available to interested parties and to appropriate A-95 clearinghouses.

(d) *Execution of the Agreement.* After consideration of comments received and completion of any necessary revisions, the Executive Director, the Agency Official, and other parties, if appropriate, shall sign the Agreement and it shall be sent to the Chairman for ratification.

(e) *Chairman's Review.* Upon receipt of a signed Agreement, the Chairman shall review the Agreement and within 30 days shall take one of the following actions:

(1) Ratify the Agreement, at which time it will take effect.

(2) Submit the Agreement to the full Council for approval.

(3) Disapprove the Agreement.

(f) *Effect of the Agreement.* An approved Programmatic Memorandum of Agreement shall constitute the comments of the Council on all individual undertakings carried out pursuant to the terms of the Agreement and, unless otherwise provided by the Agreement, shall satisfy the agency's responsibilities under Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations for all undertakings carried out in accordance with the Agreement.

(g) *Notice.* Notice of an approved Programmatic Agreement shall be published by the Council in the FEDERAL REGISTER. Copies shall be distributed through appropriate A-95 clearinghouses and the consulting parties shall make copies readily available to the public. The Programmatic Memorandum of Agreement should be included in the final environmental impact statement prepared pursuant to the National Environmental Policy Act.

(h) *Term.* Unless otherwise provided by the Agreement, duly executed Programmatic Memorandum of Agreement shall remain in effect until revoked by any one of the signatories. The Agency Official shall submit a report annually to the Executive Director and other signatories on all actions taken pursuant to the Agreement, including any recommendations for modification or termination of the Agreement. The Executive Director and other signatories shall review the report and determine whether modification or termination of the Agreement is appropriate.

§ 800.9 Coordination With Agency Requirements Under the National Environmental Policy Act (42 U.S.C. 4321 et seq.).

Section 101(b)(4) of the National Environmental Policy Act (NEPA) declares that one objective of national environmental policy is to "preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice." In order to meet this objective, Federal agencies should coordinate NEPA compliance with the separate responsibilities of the National Historic Preservation Act and Executive Order 11593 to ensure that historic and cultural properties are given proper consideration in the preparation of environmental assessments and environmental impact statements. Agency obligations pursuant to the National Historic Preservation Act and Executive Order 11593 are independent from NEPA requirements and must be complied with even when an environmental impact statement is not required. Agencies should also be aware that the threshold for compliance with Section 106 and the Executive Order is less than that for preparation of an environmental impact statement. The former applies to any Federal, federally assisted or federally licensed undertaking having an effect on a National Register or eligible property, while the latter extends only to major Federal actions significantly affecting the human environment. Where both NEPA and the Act or Executive Order are applicable, the Council on Environmental Quality, in its National Environmental Policy Act—Regulations (40 CFR 1502.25), directs that draft environmental impact statements prepared under Section 102(2)(C) of NEPA shall, to the fullest extent possible, be prepared with and integrated with other environmental impact analyses and related surveys and studies required by other authorities—such as the National Historic Preservation Act and Executive Order 11593. Preparation of a draft environmental impact statement may fulfill the requirements for reports and documentation under these authorities.

Circulation of the statement for comment pursuant to Section 102(2)(C) of NEPA shall constitute a request for Council comments under Section 800.4 of these regulations if Federal agencies so request in cover letters circulated with draft environmental impact statements. To coordinate the independent responsibilities of the Act and NEPA, Federal agencies should undertake compliance with these regulations whenever National Register or eligible properties may be affected by an undertaking. The following subsections indicate the appropriate means of coordinating the substance and timing of agency compliance with NEPA, Section 106, and Section 2(b). The Council will review agency environmental impact statements in accordance with this section. Adherence to these provisions will provide Federal agencies with an adequate record of the consideration of National Register and eligible properties during the planning process and will facilitate the production of a single document to meet the requirements of NEPA, Section 106, Executive Order 11593, and these regulations.

(a) It is normally intended that the Section 106/Executive Order commenting period run concurrently with the NEPA review process. Initiation of the consideration of historic and cultural resources should coincide with the initiation of other environmental reviews. To the maximum extent possible, agencies should reflect the status of compliance with Section 106, the Executive Order, and these regulations in all documents prepared under NEPA (environmental assessments, draft environmental impact statements, and final environmental impact statements) to provide the public with the fullest and most complete information available on effects on historic and cultural resources and alternatives to reduce those effects. If the commenting process under Section 106 and the Executive Order is not completed before the final environmental impact statement is issued, as with undertakings where subsequent design stage reviews occur, agencies should include the council's comments in any supplemental statement that is prepared pursuant to NEPA.

(b) Federal agencies should initiate compliance with Section 106 of the Act and the Executive Order in accordance with these regulations during initial environmental assessments that are undertaken to meet the requirements of NEPA and agency environmental procedures. In any event, this should occur no later than during the preparation of the draft environmental impact statement. Identification of National Register and eligible properties should be carried out in accordance with § 800.4 of these regulations. Potential effects should then be evaluated in accordance with the Criteria of Effect and Adverse Effect in § 800.3 of these regulations. The environmental assessment and the draft environmental impact statement should fully describe any National Register or eligible properties within the area of the undertaking's potential environmental impact and the nature of the undertaking's effect on them.

(c) If evaluation of the effect resulted in a Determination of No Effect or No Adverse Effect under § 800.4, that finding, along with supporting documentation, should be included or referenced in the environmental assessment and the draft environmental impact statement.

(d) If evaluation of the effect resulted in a Determination of Adverse Effect, that finding and a copy of the agency's request for the Council's comments in accordance with § 800.4(d)(1) of these regulations should be included in or referenced in the environmental assessment and the draft environmental impact statement. Agencies should include all available relevant information on National Register and eligible properties, the effects of the undertaking and alternative courses of action so that the draft environmental impact statement can be submitted as the preliminary case report under § 800.13(b) of these regulations. In some instances, the Section 106/Executive Order commenting process will be completed prior to issuance of a draft environmental impact statement. In that event, the comments of the Council should be included in the draft.

(e) Completion of the Council commenting process in accordance with these regulations should precede issuance of the final environmental impact statement. Comments of the Council obtained pursuant to § 800.6 or § 800.8 of these regulations should be incorporated into the final statement.

(f) The Council, in its review of environmental impact statements for undertakings that affect National Register or eligible properties, will look for evidence of proper compliance with Section 106 of the Act, Section 2(b) of the Executive Order, and these regulations. The Council's views on the agency's compliance with those authorities will be included in its comments on environmental impact statements.

§ 800.10 Coordination with the Presidential Memorandum on Environmental Quality and Water Resources Management.

Federal Agencies with water resources responsibilities shall, not later than three months after publication of these regulations as finally adopted in the Federal Register, publish procedures to implement these regulations as required by the Presidential Memorandum on Environmental Quality and Water Resources Management. Each agency shall consult with the Council while developing its procedures and shall provide an opportunity for public review and comment on their proposed regulations. Agency procedures shall be effective when the Chairman approves them as conforming to the Presidential Memorandum and these regulations. Agency procedures must at a minimum include acceptable measures to prevent or mitigate losses of historic or cultural resources and provisions to insure that all projects not yet constructed will comply with these regulations. Additionally, such procedures shall prescribe a clear way to identify funding for environmental mitigation in an agency's appropriation requests. The procedures shall be approved by the Chairman within 60 days if they are consistent with these regulations. Once in effect they shall be filed with the Council and made readily available to the public. Agencies are also encouraged to publish explanatory guidance for the procedures.

§ 800.11 Counterpart regulations.

Individual Federal agencies may, in accordance with Section 1(3) of the Executive Order, the President's Memorandum on Environmental Quality and Water Resources Management, and these regulations, choose to adopt counterpart regulations related to their specific programs and authorities to assist in meeting their responsibilities under Section 106 of the Act and Section 2(b) of the Executive Order.

(a) Responsibilities of individual Federal agencies pursuant to § 800.4 may be met by counterpart regulations jointly drafted by that agency and the Executive Director and approved by the Chairman. The Federal agency shall provide ample opportunity for public participation in the development of such counterpart regulations, including publication in the Federal Register as proposed and final rule making with provision for a minimum 60 day period for public comment. Once in effect such counterpart regulations may, as appropriate, supercede the requirements of § 800.4. The Federal agency shall file approved counterpart regulations with the Council and shall make them readily available to the public.

(b) Counterpart regulations may include:

(1) A definition of undertaking as it applies to that agency's particular activities and programs.

(2) Methods to identify National Register and eligible properties for each class of undertakings.

(3) Methods to evaluate effects on National Register or eligible properties.

(4) Authorization for non-Federal participation in the consultation process, and

Standards, guidelines and other measures to ensure avoidance or mitigation of adverse effects on National Register and eligible properties for each class of undertakings.

(c) To the maximum extent possible, counterpart regulations developed pursuant to this section should be intergrated with agency regulations for the National Environmental Policy Act.

OTHER PROVISIONS

§ 800.12 Investigation of threats to National Register and eligible properties.

(a) The Council is frequently advised by State Historic Preservation Officers and others of undertakings that threaten National Register or eligible properties and that appear to involve a Federal agency. In order to protect these properties, the Executive Director investigates these matters, generally by writing to the Federal agency that appears to be involved in the undertaking. Federal agencies should respond to these inquiries within 30 days. If there is Federal involvement in the undertaking, the agency shall fulfill its responsibilities under these regulations.

(b) The Council will exercise its authority to comment to Federal agencies under these regulations in certain special situations even though written notice that an undertaking will have an adverse effect has not been received.

§ 800.13 Reports to the Council.

In order to meet responsibilities under these regulations, the Council prescribes that certain reports and documents be made available to it. The content of such reports is set forth below. The purpose is to provide sufficient information for the Council to evaluate the significance of affected National Register and eligible properties, understand the objectives and requirements of the undertaking, assess the effect in terms of the criteria specified in these regulations, and analyze the feasibility and prudence of alternatives. The Council further recognizes that the Act requires that National Register and eligible properties should be preserved "as a living part of our community life and development," and considers those elements in an undertaking that have relevance beyond historical and cultural concerns. To assist it in weighing the public interest, the Council seeks information not only bearing upon physical, esthetic, or environmental effects but also information concerning economic, social, and other benefits or detriments that will result from the undertaking. Agencies should consider these reports in the context of their compliance with the National Environmental Policy Act and incorporate their content in environmental assessments, draft environmental impact statements and final environmental impact statements as specified in § 800.9.

(a) *Documentation for Determination of No Adverse Effect.* Adequate documentation of a Determination of No Adverse Effect pursuant to § 800.4 should include the following information:

(1) A description of the agency's involvement with the proposed undertaking with citations of the agency's program authority and applicable implementing regulations, procedures, and guidelines;

(2) A description of the proposed undertaking including, as appropriate, photographs, maps, drawings, and specifications;

(3) A list of National Register and eligible properties that will be affected by the undertaking, including a description of the property's physical appearance and significance;

(4) A brief statement explaining why each of the Criteria of Adverse Effect (See Section 800.3) was found inapplicable;

(5) Written views of the State Historic Preservation Officer concerning the Determination of No Adverse Effect, if available; and,

(6) An estimate of the cost of the undertaking, identifying Federal and non-Federal shares.

(b) *Preliminary Case Reports.* Preliminary Case Reports should be submitted with a request for comments pursuant to Section 800.4 and should include the following information:

(1) A description of the agency's involvement with the proposed undertaking with citations of the agency's program authority and applicable implementing regulations, procedures, and guidelines;

(2) The status of this project in the agency's approval process;

(3) The status of this project in the agency's National Environmental Policy Act compliance process and the target date for completion of all environmental responsibilities;

(4) A description of the proposed undertaking including, as appropriate, photographs, maps, drawings, and specifications;

(5) A description of the National Register or eligible properties affected by the undertaking, including a description of the properties' physical appearance and significance;

(6) A brief statement explaining why any of the Criteria of Adverse Effect (See § 800.3) apply;

(7) Written views of the State Historic Preservation Officer concerning the effect on the property, if available;

(8) The views of other Federal agencies, State and local governments, and the other groups or individuals, when known;

(9) A description and analysis of alternatives that would avoid the adverse effects;

(10) A description and analysis of alternatives that would mitigate the adverse effects; and,

(11) An estimate of the cost of the undertaking, identifying Federal and non-Federal shares;

(c) *Reports for Council Meeting.* Consideration of an undertaking by either the full Council or a panel pursuant to § 800.6 is based on reports from the Executive Director, the Agency Official, the Secretary of the Interior, the State Historic Preservation Officer, and others. The reports consist of the following:

(1) *Secretary of the Interior's Report.* The report from the Secretary shall include a verification of the legal and historical status of the property and an assessment of the historical, architectural, archeological, or cultural significance of the property.

(2) *Agency Official's Report.* The report from the Agency Offical requesting comments shall include a general discussion and chronology of the proposed undertaking; an account of the steps taken to comply with the National Environmental Policy Act (NEPA); any relevant supporting documentation in studies that the agency has completed; an evaluation of the effect of the undertaking upon the property, with particular reference to the impact on the historical, architectural, archeological, and cultural values; steps taken or proposed by the agency to avoid or mitigate adverse effects of the undertaking; a thorough discussion of alternate courses of action; and an analysis comparing the advantages resulting from the undertaking with the disadvantages resulting from the adverse effects on National Register or eligible properties. The Agency Official shall arrange for the submission and presentation of any report by a grantee, permittee, licensee, or other party receiving Federal assistance or approval to carry out the undertaking.

(3) *Other Federal Agency Reports.* A report from any other Federal agency involved in the undertaking or a related action that affects the property in question, including a general description and chronology of that agency's involvement and its relation to the undertaking being considered by the Council.

(4) *State Historic Preservation Officer's Report.* A report from the State Historic Preservation Officer should include an assessment of the significance of the property within the State preservation program; an evaluation of the effect of the undertaking upon the property and its specific components; an evaluation of known alternate courses of action; a discussion of present or proposed participation of State and local agencies or organizations in preserving or assisting in preserving the property; an indication of the support or opposition of units of government and public and private agencies and organizations within the State; and the recommendation of the State Historic Preservation Officer.

(5) *Executive Director's Report.* A report from the Executive Director shall include a description of the actions taken pursuant to these regulations, an evaluation of the effect of the undertaking on the property, a review of any known alternate courses of action, an analysis comparing the advantages resulting from the undertaking with the disadvantages resulting from the adverse effects on Na-

tional Register or eligible properties and recommendations for Council action.

(6) *Other Reports.* The Council will consider other pertinent reports, statements, correspondence, transcripts, minutes, and documents received from any and all parties, public or private. Reports submitted pursuant to this section should be received by the Council at least 7 days prior to a Council meeting.

§ 800.14 Supplementary Guidance.

The Executive Director may issue further guidance to interpret these regulations to assist Federal agencies and State Historic Preservation Officers in meeting their responsibilities. The guidelines are for informational purposes only and will be published in the FEDERAL REGISTER and will be readily available to the public.

§ 800.15 Public Participation.

The Council encourages maximum public participation in the review process under these regulations. The Council, Federal agencies, and State Historic Preservation Officers should seek assistance from the public including other Federal agencies, units of local and State government, public and private organizations, individuals and federally recognized Indian tribes in evaluating National Register and eligible properties, determining effect, and developing alternatives to avoid or mitigate an adverse effect. The public has considerable information available that could assist Federal agencies, the State Historic Preservation Officer and the Council in meeting their responsibilities under these regulations. The Council especially urges that Federal agencies make every effort to involve grantees, permittees, licensees, and other parties in interest in the consultation process. To this end, the Council, the Agency Official, and the State Historic Preservation Officer should:

(a) Make readily available, to the extent possible, documents, materials, and other information and data concerning the undertaking and effects on National Register and eligible properties that may be of interest to the public. Such information should be made available within the limits of the Freedom of Information Act (5 U.S.C. 552) and need not necessarily include information on budget, financial, personnel, and other proprietary matters or the specific location of archeological sites. Material to be made available to the public by the agency and the State Historic Preservation Officer should be provided to the public at the minimum cost permissible.

(b) Make the public aware of Public Information Meetings (§ 800.6(b)(3)), full or panel Council meetings (§ 800.6(d)), and the availability of other information related to the review process under these regulations such as a Determination of No Effect, a Determination of No Adverse Effect, a Memorandum of Agreement (See § 800.6(c)) or a Programmatic Memorandum of Agreement (See § 800.8). The purpose of such notice is to inform persons, agencies, and organizations that may be interested or affected by the proposed undertaking of the opportunity to participate in the review process under these regulations. This may include:

(1) Mailing notice to those who have requested it on an individual undertaking or Programmatic Memorandum of Agreement.

(2) Use of notice in local newspaper, local media, and newsletters that may be expected to reach potentially interested persons.

(3) Posting of notice on- and off-site in the area where the undertaking is proposed to be located.

(c) Solicit relevant information from the public during the identification of National Register and eligible properties, the evaluation of effects, and the consideration of alternatives.

(d) Hold or sponsor public meetings on proposed undertakings and make diligent efforts to include the public.

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A.3.3

Text of 36CFR60

36 CFR 60 National Register of Historic Places

PART 60—NATIONAL REGISTER OF HISTORIC PLACES

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60.15 Removing properties from the National Register.

AUTHORITY: National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 *et seq.*, and EO 11593.

SOURCE: 46 FR 56187, Nov. 16, 1981, unless otherwise noted.

§ 60.1 Authorization and expansion of the National Register.

(a) The National Historic Preservation Act of 1966, 80 Stat. 915, 16 U.S.C. 470 *et seq.*, as amended, authorizes the Secretary of the Interior to expand and maintain a National Register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering and culture. The regulations herein set forth the procedural requirements for listing properties on the National Register.

(b) Properties are added to the National Register through the following processes.

(1) Those Acts of Congress and Executive orders which create historic areas of the National Park System administered by the National Park Service, all or portions of which may be determined to be of historic significance consistent with the intent of Congress;

(2) Properties declared by the Secretary of the Interior to be of national significance and designated as National Historic Landmarks;

(3) Nominations prepared under approved State Historic Preservation Programs, submitted by the State Historic Preservation Officer and approved by the NPS;

(4) Nominations from any person or local government (only if such property is located in a State with no approved State Historic Preservation Program) approved by the NPS and;

(5) Nominations of Federal properties prepared by Federal agencies, submitted by the Federal Preservation Officer and approved by NPS.

§ 60.2 Effects of listing under Federal law.

The National Register is an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. Listing of private property on the National Register does not prohibit under Federal law or regulation any actions which may otherwise be taken by the property owner with respect to the property.

(a) The National Register was designed to be and is administered as a planning tool. Federal agencies undertaking a project having an effect on a listed or eligible property must provide the Advisory Council on Historic Preservation a reasonable opportunity to comment pursuant to section 106 of the National Historic Preservation Act of 1966, as amended. The Council has adopted procedures concerning, *inter alia*, their commenting responsibility in 36 CFR Part 800. Having complied with this procedural requirement the Federal agency may adopt any course of action it believes is appropriate. While the Advisory Council comments must be taken into account and integrated into the decisionmaking process, program decisions rest with the agency implementing the undertaking.

(b) Listing in the National Register also makes property owners eligible to be considered for Federal grants-in-aid for historic preservation.

(c) If a property is listed in the National Register, certain provisions of the Tax Reform Act of 1976 as amended by the Revenue Act of 1978 and the Tax Treatment Extension Act of 1980 may apply. These provisions encourage the preservation of depreciable historic structures by allowing favorable tax treatments for rehabilitation, and discourage destruction of historic buildings by eliminating certain otherwise available Federal tax provisions both for demolition of historic structures and for new construction on the site of demolished historic buildings. Owners of historic buildings may benefit from the investment tax credit provisions of the Revenue Act of 1978. The Economic Recovery Tax Act of 1981 generally replaces the rehabilitation tax incentives under these laws beginning January 1, 1982 with a 25% investment tax credit for rehabilitations of historic commercial, industrial and residential buildings. This can be combined with a 15-year cost recovery period for the adjusted basis of the historic building. Historic buildings with certified rehabilitations receive additional tax savings by their exemption from any requirement to reduce the basis of the building by the amount of the credit. The denial of accelerated depreciation for a building built on the site of a demolished historic building is repealed effective January 1, 1982. The Tax Treatment Extension Act of 1980 includes provisions regarding charitable contributions for conservation purposes of partial interests in historically important land areas or structures.

(d) If a property contains surface coal resources and is listed in the National Register, certain provisions of the Surface Mining and Control Act of 1977 require consideration of a property's historic values in the determination on issuance of a surface coal mining permit.

§ 60.3 Definitions.

(a) *Building.* A building is a structure created to shelter any form of human activity, such as a house, barn, church, hotel, or similar structure. Building may refer to a historically related complex such as a courthouse and jail or a house and barn.

Examples

Molly Brown House (Denver, CO)
Meek Mansion and Carriage House (Hayward, CA)
Huron County Courthouse and Jail (Norwalk, OH)
Fairntosh Plantation (Durham vicinity, NC)

(b) *Chief elected local official.* Chief elected local official means the mayor, county judge, county executive or otherwise titled chief elected administrative official who is the elected head of the local political jurisdiction in which the property is located.

(c) *Determination of eligibility.* A determination of eligibility is a decision by the Department of the Interior that a district, site, building, structure or object meets the National Register criteria for evaluation although the property is not formally listed in the National Register. A determination of eligibility does not make the property eligible for such benefits as grants, loans, or tax incentives that have listing on the National Register as a prerequisite.

(d) *District.* A district is a geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history.

Examples

Georgetown Historic District (Washington, DC)
Martin Luther King Historic District (Atlanta, GA)
Durango-Silverton Narrow-Gauge Railroad (right-of-way between Durango and Silverton, CO)

(e) *Federal Preservation Officer.* The Federal Preservation Officer is the official designated by the head of each Federal agency responsible for coordinating that agency's activities under the National Historic Preservation Act of 1966, as amended, and Executive Order 11593 including nominating properties under that agency's ownership or control to the National Register.

(f) *Keeper of the National Register of Historic Places.* The Keeper is the individual who has been delegated the authority by NPS to list properties and determine their eligibility for the National Register. The Keeper may further delegate this authority as he or she deems appropriate.

(g) *Multiple Resource Format submission.* A Multiple Resource Format submission for nominating properties to the National Register is one which includes all or a defined portion of the cultural resources identified in a specified geographical area.

(h) *National Park Service (NPS).* The National Park Service is the bureau of the Department of Interior to which the Secretary of Interior has delegated the authority and responsibility for administering the National Register program.

(i) *National Register Nomination Form.* National Register Nomination Form means (1) National Register Nomination Form NPS 10-900, with accompanying continuation sheets (where necessary) Form NPS 10-900a, maps and photographs or (2) for Federal nominations, Form No. 10-306, with continuation sheets (where necessary) Form No. 10-300A, maps and photographs. Such nomination forms must be "adequately documented" and "technically and professionally correct and sufficient." To meet these requirements the forms and accompanying maps and photographs must be completed in accord with requirements and guidance in the NPS publication, "How to Complete National Register Forms" and other NPS technical publications on this subject. Descriptions and statements of significance must be prepared in accord with standards generally accepted by academic historians, architectural historians and archeologists. The nomination form is a legal document and reference for historical, architectural, and archeological data upon which the protections for listed and eligible properties are founded. The nominating authority certifies that the nomination is adequately documented and technically and professionally correct and sufficient upon nomination.

(j) *Object.* An object is a material thing of functional, aesthetic, cultural, historical or scientific value that may be, by nature or design, movable yet related to a specific setting or environment.

Examples

Delta Queen Steamboat (Cincinnati, OH)
Adams Memorial (Rock Creek Cemetery Washington, DC)
Sumpter Valley Gold Dredge (Sumpter, OR)

(k) *Owner or owners.* The term owner or owners means those individuals, partnerships, corporations or public agencies holding fee simple title to property. Owner or owners does not include individuals, partnerships, corporations or public agencies holding easements or less than fee interests (including leaseholds) of any nature.

(l) *Site.* A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historical or archeological value regardless of the value of any existing structure.

Examples

Cabin Creek Battlefield (Pensacola vicinity, OK)
Mound Cemetery Mound (Chester vicinity, OH)
Mud Springs Pony Express Station Site (Dalton vicinity, NE)

(m) *State Historic Preservation Officer.* The State Historic Preservation Officer is the person who has been designated by the Governor or chief executive or by State statute in each State to administer the State Historic Preservation Program, including identifying and nominating eligible properties to the National Register and otherwise administering applications for listing historic properties in the National Register.

(n) *State Historic Preservation Program.* The State Historic Preservation Program is the program established by each State and approved by the Secretary of Interior for the purpose of carrying out the provisions of the National Historic Preservation Act of 1966, as amended, and related laws and regulations. Such program shall be approved by the Secretary before the State may nominate properties to the National Register. Any State Historic Preservation Program in effect under prior authority of law before December 12, 1980, shall be treated as an approved program until the Secretary approves a program submitted by the State for purposes of the Amendments or December 12, 1983, unless the Secretary chooses to rescind such approval because of program deficiencies.

(o) *State Review Board.* The State Review Board is a body whose members represent the professional fields of American history, architectural history, historic architecture, prehistoric and historic archeology, and other professional disciplines and may include citizen members. In States with approved State historic preservation programs the State Review Board reviews and approves National Register nominations concerning whether or not they meet the criteria for evaluation prior to their submittal to the NPS.

(p) *Structure.* A structure is a work made up of interdependent and interrelated parts in a definite pattern of organization. Constructed by man, it is often an engineering project large in scale.

Examples

Swanton Covered Railroad Bridge (Swanton vicinity, VT)
Old Point Loma Lighthouse (San Diego, CA)
North Point Water Tower (Milwaukee, WI)
Reber Radio Telescope (Green Bay vicinity WI)

(q) *Thematic Group Format submission.* A Thematic Group Format submission for nominating properties to the National Register is one which includes a finite group of resources related to one another in a clearly distinguishable way. They may be related to a single historic person, event, or developmental force; of one building type or use, or designed by a single architect; of a single archeological site form, or related to a particular set of archeological research problems.

(r) *To nominate.* To nominate is to propose that a district, site, building, structure, or object be listed in the National Register of Historic Places by preparing a nomination form, with accompanying maps and photographs which adequately document the property and are technically and professionally correct and sufficient.

§ 60.4 Criteria for evaluation.

The criteria applied to evaluate properties (other than areas of the National Park System and National Historic Landmarks) for the National Register are listed below. These criteria are worded in a manner to provide for a wide diversity of resources. The following criteria shall be used in evaluating properties for nomination to the National Register, by NPS in reviewing nominations, and for evaluating National Register eligibility of properties Guidance in applying the criteria is further discussed in the "How To" publications, Standards & Guidelines sheets and Keeper's opinions of the National Register. Such materials as available upon request.

National Register criteria for evaluation The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting materials, workmanship feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

Criteria considerations. Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

(a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

(b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

(c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.

(d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance.

This exception is described further in NPS "How To" #2, entitled "How to Evaluate and Nominate Potential National Register Properties That Have Achieved Significance Within the Last 50 Years" which is available from the National Register of Historic Places Division, National Park Service, United States Department of the Interior, Washington, D.C. 20240.

§ 60.5 Nomination forms and information collection.

(a) All nominations to the National Register are to be made on standard National Register forms. These forms are provided upon request to the State Historic Preservation Officer, participating Federal agencies and others by the NPS. For archival reasons, no other forms, photocopied or otherwise, will be accepted.

(b) The information collection requirements contained in this part have been approved by the Office of Management and Budget under 44 U.S.C. 3507 and assigned clearance number *1024-0018.* The information is being collected as part of the nomination of properties to the National Register. This information will be used to evaluate the eligibility of properties for inclusion in the National Register under established criteria The obligation to respond is required to obtain a benefit.

§ 60.6 Nominations by the State Historic Preservation Officer under approved State Historic Preservation programs.

(a) The State Historic Preservation Officer is responsible for identifying and nominating eligible properties to the National Register. Nomination forms are prepared under the supervision of the State Historic Preservation Officer. The State Historic Preservation Officer establishes statewide priorities for preparation and submittal of nominations for all properties meeting National Register criteria for evaluation within the State. All nominations from the State shall be submitted in accord with the State priorities, which shall be consistent with an approved State historic preservation plan.

(b) The State shall consult with local authorities in the nomination process. The State provides notice of the intent to nominate a property and solicits written comments especially on the significance of the property and whether or not it meets the National Register criteria for evaluation. The State notice also gives owners of private property an opportunity to concur in or object to listing. The notice is carried out as specified in the subsections below.

(c) As part of the nomination process, each State is required to notify in writing the property owner(s), except as specified in paragraph (d) of this section, of the State's intent to bring the nomination before the State Review Board The list of owners shall be obtained from either official land recordation records or tax records, whichever is more appropriate, within 90 days prior to the notification of intent to nominate. If in any State the land recordation or tax records is not the most appropriate list from which to obtain owners that State shall notify the Keeper in writing and request approval that an alternative source of owners may be used.

The State is responsible for notifying only those owners whose names appear on the list consulted. Where there is more than one owner on the list, each separate owner shall be notified. The State shall send the written notification at least 30 but not more than 75 days before the State Review Board meeting. Required notices may vary in some details of wording as the States prefer, but the content of notices must be approved by the National Register. The notice shall give the owner(s) at least 30 but not more than 75 days to submit written comments and concur in or object in writing to the nomination of such property. At least 30 but not more than 75 days before the State Review Board meeting, the States are also required to notify by the above mentioned National Register approved notice the applicable chief elected official of the county (or equivalent governmental unit) and municipal political jurisdiction in which the property is located. The National Register nomination shall be on file with the State Historic Preservation Program during the comment period and a copy made available by mail when requested by the public, or made available at a location of reasonable access to all affected property owners, such as a local library courthouse, or other public place, prior to the State Review Board meeting so that written comments regarding the nomination can be prepared.

(d) For a nomination with more than 50 property owners, each State is required to notify in writing at least 30 but not more than 75 days in advance of the State Review Board meeting the chief elected local officials of the county (or equivalent governmental unit) and municipal political jurisdiction in which the property or district is located. The State shall provide general notice to property owners concerning the State's intent to nominate. The general notice shall be published at least 30 days but not more than 75 days before the State Review Board meeting and provide an opportunity for the submission of written comments and provide the owners of private property or a majority of such owners for districts an opportunity to concur in or object in writing to the nomination. Such general notice must be published in one or more local newspapers of general circulation in the area of the nomination. The content of the notices shall be approved by the National Register. If such general notice is used to notify the property owners for a nomination containing more than 50 owners, it is suggested that a public information meeting be held in the immediate area prior to the State Review Board meeting. If the State wishes to individually notify all property owners, it may do so, pursuant to procedures specified in Subsection 60.6(c), in which case, the State need not publish a general notice.

(e) For Multiple Resource and Thematic Group Format submission, each district, site, building, structure and object included in the submission is treated as a separate nomination for the purpose of notification and to provide owners of private property the opportunity to concur in or object in writing to the nomination in accord with this section.

(f) The commenting period following notifications can be waived only when all property owners and the chief elected local official have advised the State in writing that they agree to the waiver.

(g) Upon notification, any owner or owners of a private property who wish to object shall submit to the State Historic Preservation Officer a notarized statement certifying that the party is the sole or partial owner of the private property, as appropriate, and objects to the listing. In nominations with multiple ownership of a single private property or of districts, the property will not be listed if a majority of the owners object to listing. Upon receipt of notarized objections respecting a district or single private property with multiple owners, it is the responsibility of the State Historic Preservation Officer to ascertain whether a majority of owners of private property have objected. If an owner whose name did not appear on the list certifies in a written notarized statement that the party is the sole or partial owner of a nominated private property such owner shall be counted by the State Historic Preservation Officer in determining whether a majority of owners has objected. Each owner of private property in a district has one vote regardless of how many properties or what part of one property that party owns and regardless of whether the property contributes to the significance of the district.

(h) If a property has been submitted to and approved by the State Review Board for inclusion in the National Register prior to the effective date of this section, the State Historic Preservation Officer need not resubmit the property to the State Review Board; but before submitting the nomination to the NPS shall afford owners of private property the opportunity to concur in or object to the property's inclusion in the Register pursuant to

applicable notification procedures described above.

(i) [Reserved]

(j) Completed nomination forms or the documentation proposed for submission on the nomination forms and comments concerning the significance of a property and its eligibility for the National Register are submitted to the State Review Board. The State Review Board shall review the nomination forms or documentation proposed for submission on the nomination forms and any comments concerning the property's significance and eligibility for the National Register. The State Review Board shall determine whether or not the property meets the National Register criteria for evaluation and make a recommendation to the State Historic Preservation Officer to approve or disapprove the nomination.

(k) Nominations approved by the State Review Board and comments received are then reviewed by the State Historic Preservation Officer and if he or she finds the nominations to be adequately documented and technically, professionally, and procedurally correct and sufficient and in conformance with National Register criteria for evaluation, the nominations are submitted to the Keeper of the National Register of Historic Places, National Park Service, United States Department of the Interior, Washington, D.C. 20240. All comments received by a State and notarized statements of objection to listing are submitted with a nomination.

(l) If the State Historic Preservation Officer and the State Review Board disagree on whether a property meets the National Register criteria for evaluation, the State Historic Preservation Officer, if he or she chooses, may submit the nomination with his or her opinion concerning whether or not the property meets the criteria for evaluation and the opinion of the State Review Board to the Keeper of the National Register for a final decision on the listing of the property. The opinion of the State Review Board may be the minutes of the Review Board meeting. The State Historic Preservation Officer shall submit such disputed nominations if so requested within 45 days of the State Review Board meeting by the State Review Board or the chief elected local official of the local, county or municipal political subdivision in which the property is located but need not otherwise do so. Such nominations will be substantively reviewed by the Keeper.

(m) The State Historic Preservation Officer shall also submit to the Keeper nominations if so requested under the appeals process in § 60.12.

(n) If the owner of a private property or the majority of such owners for a district or single property with multiple owners have objected to the nomination prior to the submittal of a nomination, the State Historic Preservation Officer shall submit the nomination to the Keeper only for a determination of eligibility pursuant to subsection (s) of this section.

(o) The State Historic Preservation Officer signs block 12 of the nomination form if in his or her opinion the property meets the National Register criteria for evaluation. The State Historic Preservation Officer's signature in block 12 certifies that:

(1) All procedural requirements have been met;

(2) The nomination form is adequately documented;

(3) The nomination form is technically and professionally correct and sufficient;

(4) In the opinion of the State Historic Preservation Officer, the property meets the National Register criteria for evaluation.

(p) When a State Historic Preservation Officer submits a nomination form for a property that he or she does not believe meets the National Register criteria for evaluation, the State Historic Preservation Officer signs a continuation sheet Form NPS 10-900a explaining his/her opinions on the eligibility of the property and certifying that:

(1) All procedural requirements have been met;

(2) The nomination form is adequately documented;

(3) The nomination form is technically and professionally correct and sufficient.

(q) Notice will be provided in the Federal Register that the nominated property is being considered for listing in the National Register of Historic Places as specified in § 60.13.

(r) Nominations will be included in the National Register within 45 days of receipt by the Keeper or designee unless the Keeper disapproves a nomination, an appeal is filed, or the owner of private property (or the majority of such owners for a district or single property with multiple owners) objects by notarized statements received by the Keeper prior to listing. Nominations which are technically or professionally inadequate will be returned for correction and resubmission. When a property does not appear to meet the National Register criteria for evaluation, the nomination will be returned with an explanation as to why the property does not meet the National Register criteria for evaluation.

(s) If the owner of private property (or the majority of such owners for a district or single property with multiple owners) has objected to the nomination by notarized statement prior to listing, the Keeper shall review the nomination and make a determination of eligibility within 45 days of receipt, unless an appeal is filed. The Keeper shall list such properties determined eligible in the National Register upon receipt of notarized statements from the owner(s) of private property that the owner(s) no longer object to listing.

(t) Any person or organization which supports or opposes the nomination of a property by a State Historic Preservation Officer may petition the Keeper during the nomination process either to accept or reject a nomination. The petitioner must state the grounds of the petition and request in writing that the Keeper substantively review the nomination. Such petitions received by the Keeper prior to the listing of a property in the National Register or a determination of its eligibility where the private owners object to listing will be considered by the Keeper and the nomination will be substantively reviewed.

(u) State Historic Preservation Officers are required to inform the property owners and the chief elected local official when properties are listed in the National Register. In the case of a nomination where there are more than 50 property owners, they may be notified of the entry in the National Register by the same general notice stated in § 60.6(d). States which notify all property owners individually of entries in the National Register need not publish a general notice.

(v) In the case of nominations where the owner of private property (or the majority of such owners for a district or single property with multiple owners) has objected and the Keeper has determined the nomination eligible for the National Register, the State Historic Preservation Officer shall notify the appropriate chief elected local official and the owner(s) of such property of this determination. The general notice may be used for properties with more than 50 owners as described in § 60.6(d) or the State Historic Preservation Officer may notify the owners individually.

(w) If subsequent to nomination a State makes major revisions to a nomination or renominates a property rejected by the Keeper, the State Historic Preservation Officer shall notify the affected property owner(s) and the chief elected local official of the revisions or renomination in the same manner as the original notification for the nomination, but need not resubmit the nomination to the State Review Board. Comments received and notarized statements of objection must be forwarded to the Keeper along with the revisions or renomination. The State Historic Preservation Officer also certifies by the resubmittal that the affected property owner(s) and the chief elected local official have been renotified. "Major revisions" as used herein means revisions of boundaries or important substantive revisions to the nomination which could be expected to change the ultimate outcome as to whether or not the property is listed in the National Register by the Keeper.

(x) Notwithstanding any provision hereof to the contrary, the State Historic Preservation Officer in the nomination notification process or otherwise need not make available to any person or entity (except a Federal agency planning a project, the property owner, the chief elected local official of the political jurisdiction in which the property is located, and the local historic preservation commission for certified local governments) specific information relating to the location of properties proposed to be nominated to, or listed in, the National Register if he or she determines that the disclosure of specific information would create a risk of destruction or harm to such properties.

(y) With regard to property under Federal ownership or control, completed nomination forms shall be submitted to the Federal Preservation Officer for review and comment. The Federal Preservation Officer, may approve the nomination and forward it to the Keeper of the National Register of Historic Places, National Park Service, United States Department of the Interior, Washington, D.C. 20240.

[46 FR 56187, Nov. 16, 1981, as amended at 48 FR 46308, Oct. 12, 1983]

§§ 60.7—60.8 [Reserved]

§ 60.9 Nominations by Federal agencies.

(a) The National Historic Preservation Act of 1966, as amended, requires that, with the advice of the Secretary and in cooperation with the State Historic Preservation Officer of the State involved, each Federal agency shall establish a program to locate, inventory and nominate to the Secretary all properties under the agency's ownership or control that appear to qualify for inclusion on the National Register. Section 2(a) of Executive Order 11593 provides that Federal agencies shall locate, inventory, and nominate to the Secretary of the Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places. Additional responsibilities of Federal agencies are detailed in the National Historic Preservation Act of 1966 as amended, Executive Order 11593, the National Environmental Policy Act of 1969, the Archeological and Historic Preservation Act of 1974, and procedures developed pursuant to these authorities, and other related legislation.

(b) Nomination forms are prepared under the supervision of the Federal Preservation Officer designated by the head of a Federal agency to fulfill agency responsibilities under the National Historic Preservation Act of 1966, as amended.

(c) Completed nominations are submitted to the appropriate State Historic Preservation Officer for review and comment regarding the adequacy of the nomination, the significance of the property and its eligibility for the National Register. The chief elected local officials of the county (or equivalent governmental unit) and municipal political jurisdiction in which the property is located are notified and given 45 days in which to comment. The State Historic Preservation Officer signs block 12 of the nomination form with his/her recommendation.

(d) After receiving the comments of the State Historic Preservation Officer, and chief elected local official, or if there has been no response within 45 days, the Federal Preservation Officer may approve the nomination and forward it to the Keeper of the National Register of Historic Places, National Park Service, United States Department of the Interior, Washington, D.C. 20240. The Federal Preservation Officer signs block 12 of the nomination form if in his or her opinion the property meets the National Register criteria for evaluation. The Federal Preservation Officer's signature in block 12 certifies that:

(1) All procedural requirements have been met;

(2) The nomination form is adequately documented;

(3) The nomination form is technically and professionally correct and sufficient;

(4) In the opinion of the Federal Preservation Officer, the property meets the National Register criteria for evaluation.

(e) When a Federal Preservation Officer submits a nomination form for a property that he or she does not believe meets the National Register criteria for evaluation, the Federal Preservation Officer signs a continuation sheet Form NPS 10-900a explaining his/her opinions on the eligibility of the property and certifying that:

(1) All procedural requirements have been met;

(2) The nomination form is adequately documented.

(3) The nomination form is technically and professionally correct and sufficient

(4) The comments of the State Historic Preservation Officer and chief local official are appended to the nomination, or, if there are no comments from the State Historic Preservation Officer an explanation is attached. Concurrent nominations (see § 60.10) cannot be submitted, however, until the nomination has been considered by the State in accord with Sec. 60.6, supra Comments received by the State concerning concurrent nominations and notarized statements of objection must be submitted with the nomination.

(g) Notice will be provided in the FEDERAL REGISTER that the nominated property is being considered for listing in the National Register of Historic Places in accord with § 60.13.

(h) Nominations will be included in the National Register within 45 days of receipt by the Keeper or designee unless the Keeper disapproves such nomination or an appeal is filed. Nominations which are technically or professionally inadequate will be returned for correction and resubmission When a property does not appear to meet the National Register criteria for evaluation, the nomination will be returned with an explanation as to why the property does not meet the National Register criteria for evaluation

(i) Any person or organization which supports or opposes the nomination of a property by a Federal Preservation Officer may petition the Keeper during the nomination process either to accept or reject a nomination The petitioner must state the grounds of the petition and request in writing that the Keeper substantively review the nomination. Such petition received by the Keeper prior to the listing of a property in the National Register or a determination of its eligibility where the private owner(s) object to listing will be considered by the Keeper and the nomination will be substantively reviewed

§ 60.10 Concurrent State and Federal nominations.

(a) State Historic Preservation Officers and Federal Preservation Officers are encouraged to cooperate in locating, inventorying, evaluating, and nominating all properties possessing historical, architectural, archeological, or cultural value. Federal agencies may nominate properties where a portion of the property is not under Federal ownership or control.

(b) When a portion of the area included in a Federal nomination is not located on land under the ownership or control of the Federal agency, but is an integral part of the cultural resource, the completed nomination form shall be sent to the State Historic Preservation Officer for notification to property owners, to give owners of private property an opportunity to concur in or object to the nomination, to solicit written comments and for submission to the State Review Board pursuant to the procedures in § 60.6.

(c) If the State Historic Preservation Officer and the State Review Board agree that the nomination meets the National Register criteria for evaluation, the nomination is signed by the State Historic Preservation Officer and returned to the Federal agency initiating the nomination. If the State Historic Presevation Officer and the State Review Board disagree, the nomination shall be returned to the Federal agency with the opinions of the State Historic Preservation Officer and the State Review Board concerning the adequacy of the nomination and whether or not the property meets the criteria for evaluation. The opinion of the State Review Board may be the minutes of the State Review Board meeting. The State Historic Preservation Officer's signed opinion and comments shall confirm to the Federal agency that the State nomination procedures have been fulfilled including notification requirements Any comments received by the State shall be included with the letter as shall any notarized statements objecting to the listing of private property.

(d) If the owner of any privately owned property, (or a majority of the owners of such properties within a district or single property with multiple owners) objects to such inclusion by notarized statement(s) the Federal Historic Preservation Officer shall submit the nomination to the Keeper for review and a determination of eligibility. Comments, opinions, and notarized statements of objection shall be submitted with the nomination

(e) The State Historic Preservation Officer shall notify the nonfederal owners when a concurrent nomination is listed or determined eligible for the National Register as required in § 60.6

§ 60.11 Requests for nominations.

(a) The State Historic Preservation Officer or Federal Preservation Officer as appropriate shall respond in writing within 60 days to any person or organization submitting a completed National Register nomination form or requesting consideration for any previously prepared nomination form on record with the State or Federal agency. The response shall provide a technical opinion concerning whether or not the property is adequately documented and appears to meet the National Register criteria for evaluation in § 60.4. If the nomination form is determined to be inadequately documented, the nominating authority shall provide the applicant with an explanation of the reasons for that determination

(b) If the nomination form does not appear to be adequately documented, upon receiving notification, it shall be the responsibility of the applicant to provide necessary additional documentation

(c) If the nomination form appears to be adequately documented and if the property appears to meet the National Register criteria for evaluation, the State Historic Preservation Officer shall comply with the notification requirements in Section 60.6 and schedule the property for presentation at the earliest possible State Review Board meeting Scheduling shall be consistent with the State's established priorities for processing nominations If the nomination form is adequately documented, but the property does not appear to meet National Register criteria for evaluation, the State Historic Preservation Officer need not process the nomination, unless so requested by the Keeper pursuant to § 60.12.

(d) The State Historic Preservation Officer's response shall advise the applicant of the property's position in accord with the State's priorities for processing nominations and of the approximate date the applicant can expect its consideration by the State Review Board The State Historic Preservation Officer shall also provide notice to the applicant of the time and place of the Review Board meeting at least 30 but not more than 75 days before the meeting, as well as complying with the notification requirements in § 60.6

(e) Upon action on a nomination by the State Review Board, the State Historic Preservation Officer shall, within 90 days, submit the nomination to the National Park Service, or, if the State Historic Preservation Officer does not consider the property eligible for the National Register, so advise the applicant within 45 days.

(f) If the applicant substantially revises a nomination form as a result of comments by the State or Federal agency, it may be treated by the State Historic Preservation Officer or Federal Preservation Officer as a new submittal and reprocessed in accord with the requirements in this section

(g) The Federal Preservation Officer shall request the comments of the State Historic Preservation Officer and notify the applicant in writing within 90 days of receipt of an adequately documented nomination form as to whether the Federal agency will nominate the property The Federal Preservation Officer shall submit an adequately documented nomination to the National Park Service unless in his or her opinion the property is not eligible for the National Register

[48 FR 46308 Oct 12 1983]

§ 60.12 Nomination appeals.

(a) Any person or local government may appeal to the Keeper the failure or refusal of a nominating authority to nominate a property that the person or local government considers to meet the National Register criteria for evaluation upon decision of a nominating authority to not nominate a property for any reason when requested pursuant to § 60.11 or upon failure of a State Historic Preservation Officer to nominate a property recommended by the State Review Board. (This action differs from the procedure for appeals during the review of a nomination by the National Park Service where an individual or organization may petition the Keeper during the nomination process as specified in §§ 60.6(t) and 60.9(i). Upon receipt of such petition the normal 45 day review period will be extended for 30 days beyond the date of the petition to allow the petitioner to provide additional documentation for review.)

(b) Such appeal shall include a copy of the nomination form and documentation previously submitted to the State Historic Preservation Officer or Federal Preservation Officer, an explanation of why the applicant is submitting the appeal in accord with this section and shall include pertinent correspondence from the State Historic Preservation Officer or Federal Preservation Officer.

(c) The Keeper will respond to the appellant and the State Historic Preservation Officer or Federal Preservation Officer with a written explanation either denying or sustaining the appeal within 45 days of receipt. If the appeal is sustained the Keeper will:

(1) request the State Historic Preservation Officer or Federal Preservation Officer to submit the nomination to the Keeper within 15 days if the nomination has completed the procedural requirements for nomination as described in Section 60.6 or 60.9 except that concurrence of the State Review Board, State Historic Preservation Officer or Federal Preservation Officer is not required; or

(2) If the nomination has not completed these procedural requirements, request the State Historic Preservation Officer or Federal Preservation Officer to promptly process the nomination pursuant to Section 60.6 or 60.9 and submit the nomination to the Keeper without delay.

(d) State Historic Preservation Officers and Federal Preservation Officers shall process and submit such nominations if so requested by the Keeper pursuant to this section. The Secretary reserves the right to list properties in the National Register or determine properties eligible for such listing on his own motion when necessary to assist in the preservation of historic resources and after notifying the owner and appropriate parties and allowing for a 30-day comment period.

(e) No person shall be considered to have exhausted administrative remedies with respect to failure to nominate a property to the National Register until he or she has complied with procedures set forth in this section. The decision of the Keeper is the final administrative action on such appeals.

[48 FR 46308, Oct. 12, 1983]

§ 60.13 Publication in the "Federal Register" and other NPS notification.

(a) When a nomination is received, NPS will publish notice in the FEDERAL REGISTER that the property is being considered for listing in the National Register. A 15 day commenting period from date of publication will be provided. When necessary to assist in the preservation of historic properties this 15 day period may be shortened or waived.

(b) NPS shall notify the appropriate State Historic Preservation Officer, Federal Preservation Officer, person or local government when there is no approved State program of the listing of the property in the National Register and will publish notice of the listing in the FEDERAL REGISTER.

(c) In nominations where the owner of any privately owned property (or a majority of the owners of such properties within a district or single property with multiple owners) has objected and the Keeper has determined the nomination eligible for the National Register, NPS shall notify the State Historic Preservation Officer, the Federal Preservation Officer (for Federal or concurrent nominations), the person or local government where there is no approved State Historic Preservation Program and the Advisory Council on Historic Preservation. NPS will publish notice of the determination of eligibility in the FEDERAL REGISTER.

§ 60.14 Changes and revisions to properties listed in the National Register.

(a) *Boundary changes.* (1) A boundary alteration shall be considered as a new property nomination. All forms, criteria and procedures used in nominating a property to the National Register must be used. In the case of boundary enlargements only those owners in the newly nominated as yet unlisted area need be notified and will be counted in determining whether a majority of private owners object to listing. In the case of a diminution of a boundary, owners shall be notified as specified in § 60.15 concerning removing properties from the National Register. A professionally justified recommendation by the State Historic Preservation Officer, Federal Preservation Officer, or person or local government where there is no approved State Historic Preservation Program shall be presented to NPS. During this process, the property is not taken off the National Register. If the Keeper or his or her designee finds the recommendation in accordance with the National Register criteria for evaluation, the change will be accepted. If the boundary change is not accepted, the old boundaries will remain. Boundary revisions may be appealed as provided for in §§ 60.12 and 60.15.

(2) Four justifications exist for altering a boundary: Professional error in the initial nomination, loss of historic integrity, recognition of additional significance, additional research documenting that a larger or smaller area should be listed. No enlargement of a boundary should be recommended unless the additional area possesses previously unrecognized significance in American history, architecture, archeology, engineering or culture. No diminution of a boundary should be recommended unless the properties being removed do not meet the National Register criteria for evaluation. Any proposal to alter a boundary has to be documented in detail including photographing the historic resources falling between the existing boundary and the other proposed boundary.

(b) *Relocating properties listed in the National Register.* (1) Properties listed in the National Register should be moved only when there is no feasible alternative for preservation. When a property is moved, every effort should be made to reestablish its historic orientation, immediate setting, and general environment.

(2) If it is proposed that a property listed in the National Register be moved and the State Historic Preservation Officer, Federal agency for a property under Federal ownership or control, or person or local government where there is no approved State Historic Preservation Program, wishes the property to remain in the National Register during and after the move, the State Historic Preservation Officer or Federal Preservation Officer having ownership or control or person or local government where there is no approved State Historic Preservation Program, shall submit documentation to NPS prior to the move. The documentation shall discuss: (i) The reasons for the move; (ii) the effect on the property's historical integrity; (iii) the new setting and general environment of the proposed site, including evidence that the proposed site does not possess historical or archeological significance that would be adversely affected by the intrusion of the property; and (iv) photographs showing the proposed location.

(3) Any such proposal with respect to the new location shall follow the required notification procedures, shall be approved by the State Review Board if it is a State nomination and shall continue to follow normal review procedures. The Keeper shall also follow the required notification procedures for nominations. The Keeper shall respond to a properly documented request within 45 days of receipt from the State Historic Preservation Officer or Federal Preservation Officer, or within 90 days of receipt from a person or local government where there is no approved State Historic Preservation Program, concerning whether or not the move is approved. Once the property is moved, the State Historic Preservation Officer, Federal Preservation Officer, or person or local government where there is no approved State Historic Preservation Program shall submit to the Keeper for review: (i) a letter notifying him or her of the date the property was

moved; (ii) photographs of the property on its new site; and (iii) revised maps, including a U.S.G.S map, (iv) acreage, and (v) verbal boundary description. The Keeper shall respond to a properly documented submittal within 45 days of receipt with the final decision on whether the property will remain in the National Register. If the Keeper approves the move, the property will remain in the National Register during and after the move unless the integrity of the property is in some unforeseen manner destroyed. If the Keeper does not approve the move, the property will be automatically deleted from the National Register when moved. In cases of properties removed from the National Register, if the State, Federal agency, or person or local government where there is no approved State Historic Preservation Program has neglected to obtain prior approval for the move or has evidence that previously unrecognized significance exists, or has accrued, the State, Federal agency, person or local government may resubmit a nomination for the property.

(4) In the event that a property is moved, deletion from the National Register will be automatic unless the above procedures are followed prior to the move. If the property has already been moved, it is the responsibility of the State, Federal agency or person or local government which nominated the property to notify the National Park Service. Assuming that the State, Federal agency or person or local government wishes to have the structure reentered in the National Register, it must be nominated again on new forms which should discuss: (i) the reasons for the move; (ii) the effect on the property's historical integrity, and (iii) the new setting and general environment, including evidence that the new site does not possess historical or archeological significance that would be adversely affected by intrusion of the property. In addition, new photographs, acreage, verbal boundary description and a U.S.G.S map showing the structure at its new location must be sent along with the revised nomination. Any such nomination submitted by a State must be approved by the State Review Board.

(5) Properties moved in a manner consistent with the comments of the Advisory Council on Historic Preservation, in accord with its procedures (36 CFR Part 800), are granted as exception to § 60.12(b). Moving of properties in accord with the Advisory Council's procedures should be dealt with individually in each memorandum of agreement. In such cases, the State Historic Preservation Officer or the Federal Preservation Officer, for properties under Federal ownership or control, shall notify the Keeper of the new location after the move including new documentation as described above.

§ 60.15 Removing properties from the National Register.

(a) Grounds for removing properties from the National Register are as follows: (1) The property has ceased to meet the criteria for listing in the National Register because the qualities which caused it to be originally listed have been lost or destroyed, or such qualities were lost subsequent to nomination and prior to listing; (2) additional information shows that the property does not meet the National Register criteria for evaluation; (3) error in professional judgement as to whether the property meets the criteria for evaluation; or (4) prejudicial procedural error in the nomination or listing process. Properties removed from the National Register for procedural error shall be reconsidered for listing by the Keeper after correction of the error or errors by the State Historic Preservation Officer, Federal Preservation Officer, person or local government which originally nominated the property, or by the Keeper, as appropriate. The procedures set forth for nominations shall be followed in such reconsiderations. Any property or district removed from the National Register for procedural deficiencies in the nomination and/or listing process shall automatically be considered eligible for inclusion in the National Register without further action and will be published as such in the FEDERAL REGISTER.

(b) Properties listed in the National Register prior to December 13, 1980, may only be removed from the National Register on the grounds established in paragraph (a)(1) of this section.

(c) Any person or organization may petition in writing for removal of a property from the National Register by setting forth the reasons the property should be removed on the grounds established in paragraph (a) of this section. With respect to nominations determined eligible for the National Register because the owners of private property object to listing, anyone may petition for reconsideration of whether or not the property meets the criteria for evaluation using these procedures. Petitions for removal are submitted to the Keeper by the State Historic Preservation Officer for State nominations, the Federal Preservation Officer for Federal nominations, and directly to the Keeper from persons or local governments where there is no approved State Historic Preservation Program.

(d) Petitons submitted by persons or local governments where there is no approved State Historic Preservation Program shall include a list of the owner(s). In such cases the Keeper shall notify the affected owner(s) and the chief elected local official and give them an opportunity to comment. For approved State programs, the State Historic Preservation Officer shall notify the affected owner(s) and chief elected local official and give them an opportunity to comment prior to submitting a petition for removal. The Federal Preservation Officer shall notify and obtain the comments of the appropriate State Historic Preservation Officer prior to forwarding an appeal to NPS. All comments and opinions shall be submitted with the petition.

(e) The State Historic Preservation Officer or Federal Preservation Officer shall respond in writing within 45 days of receipt to petitions for removal of property from the National Register. The response shall advise the petitioner of the State Historic Preservation Officer's or Federal Preservation Officer's views on the petition.

(f) A petitioner desiring to pursue his removal request must notify the State Historic Preservation Officer or the Federal Preservation Officer in writing within 45 days of receipt of the written views on the petition.

(g) The State Historic Preservation Officer may elect to have a property considered for removal according to the State's nomination procedures unless the petition is on procedural grounds and shall schedule it for consideration by the State Review Board as quickly as all notification requirements can be completed following procedures outlined in § 60.6, or the State Historic Preservation Officer may elect to forward the petition for removal to the Keeper with his or her comments without State Review Board consideration.

(h) Within 15 days after receipt of the petitioner's notification of intent to pursue his removal request, the State Historic Preservation Officer shall notify the petitioner in writing either that the State Review Board will consider the petition on a specified date or that the petition will be forwarded to the Keeper after notification requirements have been completed. The State Historic Preservation Officer shall forward the petitions to the Keeper for review within 15 days after notification requirements or Review Board consideration, if applicable, have been completed.

(i) Within 15 days after receipt of the petitioner notification of intent to pursue his petition, the Federal Preservation Officer shall forward the petition with his or her comments and those of the State Historic Preservation Officer to the Keeper.

(j) The Keeper shall respond to a petition for removal within 45 days of receipt, except where the Keeper must notify the owners and the chief elected local official. In such cases the Keeper shall respond within 90 days of receipt. The Keeper shall notify the petitioner and the applicable State Historic Preservation Officer, Federal Preservation Officer, or person or local government where there is no approved State Historic Preservation Program, of his decision. The State Historic Preservation Officer or Federal Preservation Officer transmitting the petition shall notify the petitioner, the owner(s), and the chief elected local official in writing of the decision. The Keeper will provide such notice for petitions from persons or local governments where there is no approved State Historic Preservation Program. The general notice may be used for properties with more than 50 owners. If the general notice is used it shall be published in one or more newspapers with general circulation in the area of the nomination.

(k) The Keeper may remove a property from the National Register on his own motion on the grounds established in paragraph (a) of this section, except for those properties listed in the National Register prior to December 13, 1980, which may only be removed from the National Register on the grounds established in paragraph (a)(1) of this section. In such cases, the Keeper will notify the nominating authority, the affected owner(s) and the applicable chief elected local official and provide them an opportunity to comment. Upon removal, the Keeper will notify the nominating authority of the basis for the removal. The state Historic Preservation Officer, Federal Preservation Officer, or person or local government which nominated the property shall notify the owner(s) and the chief elected local official of the removal.

(l) No person shall be considered to have exhausted administrative remedies with respect to removal of a property from the National Register until the Keeper has denied a petition for removal pursuant to this section.

A.3.4

Text of 36CFR63

36 CFR 63, Determinations of Eligibility for Inclusion in the National Register of Historic Places (with Guidelines for Level of Documentation to Accompany Requests for Determinations of Eligibility for Inclusion in National Register)

PART 63—DETERMINATIONS OF ELIGIBILITY FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

Sec.
63.1 Purpose and authorities.
63.2 Determination of eligibility process.
63.3 Procedures to be applied when the agency and the State Historic Preservation Officer agree a property is eligible.
63.4 Other properties on which determinations of eligibility may be made by the Secretary of the Interior
63.5 Federal Register publication of properties determined eligible.
63.6 Review and nomination of properties determined eligible.

Authority: Sec. 2(k). Historic Sites Act of 1935, 16 U.S.C. 462(K) (1970 ed). Sec. 101(a)(1). National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470(a)(1) (1970 ed). Secs. 3(b) and 4(f), E.O. 11593.

Source: 42 FR 47661, Sept. 21, 1977, unless otherwise noted.

§ 63.1 Purpose and authorities.

(a) These regulations have been developed to assist Federal agencies in identifying and evaluating the eligibility of properties for inclusion in the National Register. The regulations explain how to request determinations of eligibility under section 2(b) of Executive Order 11593 and the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800) for implementation of sections 1(3) and 2(b) of Executive Order 11593 and the National Historic Preservation Act of 1966, as amended Federal agencies request determinations of eligibility in considering historic properties on lands under their jurisdiction or control or on lands to be affected by proposed actions.

§ 63.2 Determination of eligibility process.

The Department of the Interior will respond within 45 days of receipt of a documented request for a determination of eligibility from a Federal agency when it is submitted in accordance with the following regulations and is accompanied by documentation that clearly portrays the nature and significance of the property.

(a) The agency shall consult the State Historic Preservation Officer as the first step in identifying historic properties for information concerning:

(1) Properties listed in the National Register.

(2) Properties in the process of nomination to the National Register.

(3) Properties determined eligible by the Secretary of the Interior for listing in the National Register.

(4) Any other available information that would assist in identifying properties in the area affected by the proposed action.

(b) If the State Historic Preservation Officer has inadequate information to document the presence or absence of historic properties in the project area, the Federal agency should refer to the Department of the Interior's criteria for the identification of historic properties and the guidelines for level of documentation to accompany requests for determinations of eligibility for inclusion in the National Register published as a notice in the Federal Register.

(c) The agency shall, in consultation with the State Historic Preservation Officer, apply the National Register Criteria for Evaluation contained in 36 CFR 60.6 to all potentially eligible properties that may be affected by the proposed action. If a property appears to meet the Criteria and the State Historic Preservation Officer agrees, the agency should follow the procedures in § 63.3. If there is a question whether the Criteria are met, the agency shall complete the procedures in § 63.3(d). A question on whether a property meets the Criteria exists when the agency and the State Historic Preservation Officer disagree or when the agency determines that a question exists. The Department of the Interior will provide general and specific advice concerning the identification of historic properties and will bring to the attention of a Federal agency any information received from the public regarding potential historic properties in the area affected by its plans or projects.

(d) The agency shall submit a letter of request for a determination of eligibility with a description, statement of significance, photographs, and a map, or a statement in accord with § 63.3 below, if applicable, directly to the Keeper of the National Register, National Park Service, Department of the Interior, Washington, D.C. 20240. If available, the opinion of the State Historic Preservation Officer on the eligibility of the property should also be forwarded with the request.

(e) The Keeper, National Register, will respond in writing to the agency's request within 45 days of receipt of a documented request submitted in accord with § 63.2(d) of these procedures. If the opinion of the State Historic Preservation Officer is not included with the request, the Keeper of the National Register will provide to the State Historic Preservation Officer a copy of the request and will ask for his opinion on the property. If the

Keeper does not receive the State Historic Preservation Officer's response within three weeks of the State Historic Preservation Officer's receipt of a letter from the Keeper requesting an opinion, the Keeper will proceed with the determination and will inform the agency that the State Historic Preservation Officer did not give an opinion. If the Keeper of the National Register determines that documentation submitted with the request is not sufficient to make a professional evaluation of the significance of the property, he will advise the agency in writing of the additional information needed. The Keeper of the National Register will respond to the agency's request within 45 days of receipt of documentation on the property requested by the Keeper.

§ 63.3 Procedures to be applied when the Agency and the State Historic Preservation Officer agree a property is eligible.

If during the consultation described in § 63.2(c), both the agency and the State Historic Preservation Officer agree that a property meets the Criteria, the Federal agency or the State Historic Preservation Officer shall forward to the Keeper of the National Register (a) a letter signed by the agency stating that the agency and the State Historic Preservation Officer agree that the property is eligible for inclusion in the National Register, and (b) a statement signed by the State Historic Preservation Officer that in his opinion the property is eligible for the National Register. Either the letter or the statement must contain substantive information on the property, including a description, specific boundaries, its significance under National Register Criteria, and an explanation of why the property is eligible for listing in the National Register. The Keeper of the National Register shall give written notice of his determination to both the agency and the State Historic Preservation Officer within 10 working days of receipt. If the property has not been accurately identified and evaluated, the Keeper will inform the agency and the State Historic Preservation Officer within 10 working days and will recommend that the agency follow the process set forth at § 63.2. Notwithstanding such recommendation, the Federal agency or the Keeper of the National Register may consider the property eligible for the purpose of obtaining the Advisory Council on Historic Preservation's comments. Documentation concerning properties determined eligible for the National Register shall be kept on file by the agency and the State Historic Preservation Officer.

63.4 Other properties on which determinations of eligibility may be made by the Secretary of the Interior.

(a) The Keeper of the National Register will make determinations of eligibility on properties nomiated by Federal agencies under section 2(a) of Executive Order 11593 prior to returning the nominations for such properties to the agency for technical or professional revision or because of procedural requirements. Such determinations of eligibility will be made only if sufficient information exists to establish the significance of the property and its eligibility for the National Register

(b) Any property or district removed from the National Register for procedural deficiences in the nomination and/or listing process shall automatically be considered eligible for inclusion in the National Register without further action and will be published as such in the FEDERAL REGISTER.

(c) If necessary to assist in the protection of historic resources, the Keeper, upon consultation with the appropriate State Historic Preservation Officer and concerned Federal agency, if any, may determine properties to be eligible for listing in the National Register under the Criteria established by 36 CFR Part 60 and shall publish such determinations in the FEDERAL REGISTER. Such determinations may be made without a specific request from the Federal agency or, in effect, may reverse findings on eligibility made by a Federal agency and State Historic Preservation Officer. Such determinations will be made after an investigation and an onsite inspection of the property in question.

§ 63.5 Federal Register publication of properties determined eligible.

In addition to written notice to the Federal agency and the State Historic Preservation Officer, public notice of properties determined eligible for the National Register will be published in the FEDERAL REGISTER at regular intervals and in a cumulative annual edition usually issued in February. Determinations in accord with § 63.3 will be identified with an asterisk.

§ 63.6 Review and nomination of properties determined eligible.

The Keeper of the National Register will conduct an annual review of the condition of properties determined eligible for the National Register. The Keeper of the National Register will obtain from the Advisory Council on Historic Preservation information on decisions made concerning eligible properties in accord with memorandum of agreement under the Council's "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800). If there is no memorandum of agreement or if no provision has been made in a memorandum of agreement for nomination of an eligible property and if the property retains the characteristics that made it eligible for the National Register, the Keeper of the National Register will take the following steps:

(a) For a property owned by a Federal agency, or under the jurisdiction or control of the agency to the extent that the agency substantially exercises the attributes of ownership, the Keeper of the National Register will request the Federal agency to nominate the property to the National Register within six months.

(b) If the property is not under Federal jurisdiction or control, the Keeper of the National Register will request that the State Historic Preservation Office nominate the property to the National Register within six months.

(c) If the Keeper of the National Register determines that a property has lost the characteristics that made it eligible for the National Register, he will inform the State Historic Preservation Officer and the Federal agency and remove the property from the list of eligible properties.

DEPARTMENT OF THE INTERIOR

National Park Service

NATIONAL REGISTER OF HISTORIC PLACES

Publication Guidelines for Level of Documentation to Accompany Requests for Determinations of Eligibility for Inclusion in National Register

AGENCY: National Park Service, Interior.

ACTION: Guidelines for Level of Documentation.

SUMMARY: These guidelines provide information on the level of documentation to accompany requests for determinations of eligibility for inclusion in the National Register of Historic Places.

EFFECTIVE: Immediately.

ADDRESS: For further information contact Dr. William J. Murtagh, Keeper of the National Register, Office of Archeology and Historic Preservation, National Park Service, Department of the Interior, Washington, D.C. 20240 (202-523-5065).

SUPPLEMENTARY INFORMATION: These guidelines are being published contemporaneously with the interim rulemaking for 36 CFR Part 63—National Register of Historic Places, Determinations of Eligibility for Inclusion in the National Register. These guidelines were issued initially as Appendices A and B of the proposed 36 CFR Part 63, which was published in the FEDERAL REGISTER for comment on April 27, 1976. Comments were received on the draft regulations and those comments are discussed in the introduction to the final rulemaking for 36 CFR Part 63.

Comments received on the guidelines concerned the amount of information required for the Department of the Interior to make a determination of eligibility on a property. A determination of eligibility is made on the basis of a description, statement of significance, maps, and photographs of a property. Although these guidelines provide a general standard for evaluating properties against National Register criteria, a determination can be made on the basis of less information than is recommended in these guidelines in some cases. An introductory explanation has been added to the guidelines which emphasizes that, although each category of information is necessary to evaluate properties, many categories require only a very brief statement. In addition, much of the advice concerning documentation applies to a specific classification of properties. For example, for archeological sites, the description (VII) required would contain only the information in VII.B. Federal agencies should also coordinate closely with State Historic Preservation Officers concerning the kinds and depth of information necessary to evaluate properties.

Comments on Appendices A and B have been considered and incorporated as appropriate. The Department of the Interior has determined that these guidelines should be published in the FEDERAL REGISTER to assist Federal agencies in identifying and documenting historic properties as part of their responsibilities under the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 (a)(1) (1970 ed.), Executive Order 11953; the Environmental Policy Act of 1969 (Pub. L. 91-291; 16 U.S.C. 491 a-1). The Department of the Interior recommends that Federal agencies use these guidelines in documenting historic properties and in requesting determinations of eligibility as part of their project or program planning responsibilities. Because the Department has determined that they are guidelines, and not regulations, they will appear in the FEDERAL REGISTER but not in the Code of Federal Regulations.

These guidelines are developed under the general authority of the National Register of Historic Places program as it appears at section 2(k) of the Historic Sites Act of 1935, 16 U.S.C. 464(k) (1970 ed.), and section 101(a)(1) of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470(a)(1) (1970 ed.) and sections 3(b) and 3(f) of Executive Order 11593.

GUIDELINES FOR LEVEL OF DOCUMENTATION TO ACCOMPANY REQUESTS FOR DETERMINATIONS OF ELIGIBILITY FOR INCLUSION IN THE NATIONAL REGISTER

These regulations provide standards to which Federal agencies may refer in the preparation of the basic documentation (description, statement of significance, maps and photographs, and the opinion of the State Historic Preservation Officer) necessary to evaluate the eligibility for the National Register of districts, sites, buildings, structures, and objects. Where possible this documentation should be prepared by professionals in the fields of history, architectural history, architecture, and archeology. Although in some cases a determination of eligibility can be made on less information, the Department of the Interior recommends these guidelines as a general standard for the amount and kinds of documentation necessary to evaluate properties against the National Register criteria. The categories of information here are those required for nomination of properties to the National Register. Documentation submitted with determination of eligibility requests may be recorded on National Register nomination forms, although such forms are not required. If the information on the property has been compiled through a survey, the agency should submit the survey report as part of the documentation. Information included in the survey report or in other material need not be recorded in the format suggested in these guidelines. As long as the basic categories of information are provided, the agency may use any format for submitting this documentation which it finds convenient. Each category should be provided:

I. Request for determination.
II. Property name.
III. Location.
IV. Classification: district, site, building, structure, or object.
V. Ownership.
VI. Representation in Existing Surveys.
VII. Description.
VIII. Significance.
IX. Bibliography.
X. Geographical Data, Maps, and Acreage.
XI. Photographs.
XII. Individual(s) compiling documentation.
XIII. Opinion of the State Historic Preservation Officer.

Many of these categories require only a very brief statement. Special attention should be given to VII. Description and VIII. Significance. Much of the guidance under VII and VIII applies to a specific classification of resource. Not all this information is required for each classification (building, site, district, structure, object).

I. REQUEST FOR DETERMINATION OF ELIGIBILITY

The name and address of the agency and the agency official making the request should appear in the letter of request or as part of the documentation. Communities requesting determinations of eligibility in accord with the "Environmental Review Procedures for Community Development Block Grant Program" (24 CFR 58) should certify that the request is made as part of planning for a community development block grant project.

II. PROPERTY NAME

A. *Historic Name.* 1. Original owner or builder.

2. Significant persons or events associated with the property.

3. Innovative or unusual characteristics of the property.

4. Accepted professional, scientific, technical, or traditional names.

B. *Common Name.* This is the name by which the property is known locally.

C. *Archeological Site Name.* Archeological sites are generally named for the project, a nearby geographic feature, an aspect of cultural significance, the owner of the property, etc. For an archeological site with no name, use the numbering system in use in the State. The State site number should also be appended to the designation of a named site for cross-reference purposes.

III. LOCATION

Include the number and the name of the street or road on which the property is located. If the road has a number rather than a name, indicate whether it is a Federal, State, or country road. If a property does not have a specific address, give the names of the nearest roads. For rural properties and others without specific street addresses, precise location may be specified by indicating the side of the road (North, South, East, or West) and exact distance from nearest intersection (North, South, East, or West). If a property is rural and in the vicinity of a town or city, this should be indicated. In the case of a historic district or similarly complicated property, inclusive street address numbers for all the properties within the district should be given.

IV. CLASSIFICATION

A. *Categories.* Classify the property in the appropriate category if possible. If it is unclear what category is appropriate, this should be indicated. Agencies may, for example, request assistance in determining whether properties should be considered individually or together as a district.

1. A "district" is a geographically definable area, urban or rural, possessing a significant concentration, linkage or continuity of sites, buildings, structures, or objects which are united by past events or aesthetically by plan or physical development. A district may also be comprised of individual elements which are separated geographically but are linked by associations or history.

2. A "site" is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure whether standing, ruined, or vanished where the loca-

tion itself maintains historical or archeological value regardless of the value of any existing structures.

3. A "building" is a structure created to shelter any form of human activity such as a house, barn, church, hotel, or similar structure. "Buildings" may refer to a historically related complex, such as a courthouse and jail or a house and barn.

4. A "structure" is a work made up of interdependent and interrelated parts in a definite pattern or organization. Constructed by man, it is often an engineering project large in scale.

5. An "object" is a material thing of functional, aesthetic, cultural, historical, or scientific value that may be, by nature or design, movable yet related to a specific setting or environment.

6. Some properties may be most properly classified within two or more of the categories given above.

V. OWNERSHIP

Give the name of the owner of the property. Indicate "multiple ownership" for districts.

VI. REPRESENTATION IN EXISTING SURVEYS

Identify local, State, or Federal historic resource surveys that include or refer to the property in question. Include name of survey, date, and person or organization that conducted the survey. Federal surveys other than the National Register include, but are not limited to, the Historic American Buildings Survey, the Historic American Engineering Record, and the National Survey of Historic Sites and Buildings (National Historic Landmarks Program).

VII. DESCRIPTION

Description of the physical appearance and condition of a property is important in making an accurate assessment of its significance. To be useful, the description of the property should use appropriate professional terminology and should, be concise, factual, detailed, and well organized.

A. *Buildings, structures, or objects* should be described in detail. Marcus Whiffen's "American Architecture Since 1780: A Guide to the Styles" (The M.I.T. Press, Cambridge, 1969) provides a standard guide to American architectural styles and should be consulted when questions of terminology arise. If local terms or styles are used, they should be accompanied by a description or explanation. Unique details or unusual features should be pointed out and should be visible in the accompanying photographs. The description of a building should include the following kinds of information where applicable:

1. Kind of structure (dwelling, church, commercial, etc).

2. Building placement (detached, row, etc.).

3. General characteristics:

a. Overall shape or plan (rectangle, ell, etc.).

b. Number of stories.

c. Number of vertical divisions or bays.

d. Construction materials (brick, frame, stone, etc.) and wall finish (type of bond, coursing, shingle, etc.).

e. Roof shape (gable, hip, shed, etc.).

4. Specific Features—location, number, and appearance of: (a) Porches (verandas, stoops, attached sheds, etc.), (b) windows; (c) doors, (d) chimneys, (e) dormers.

5. Important decorative elements.

6. Significant interior features.

7. Number, type, and location of outbuildings as well as dates, if known.

8. Other manmade elements (roadways, contemporary structures, landscaping included within the area).

9. Information on moved properties: (a) Date of move; (b) descriptions of original and present locations; (c) explanation of the effect of the move on the historic integrity of the property.

10. Known alterations or changes to the property over time and dates if available. A restoration is considered an alteration even if an attempt has been made to restore the property to its original form. In cases involving numerous alterations it would be helpful to include a floor plan with the submission.

11. Guidance in compiling information on industrial or engineering structures may be obtained by consulting the Historic American Engineering Record, National Park Service, Department of the Interior, Washington, D.C. 20240.

B. *Archeological site* descriptions should include the following information:

1. Site type (e.g., midden, rockshelter, flake scatter, historic factory, etc.).

2. A description of the site including its immediate environment, using standard archeological terminology. If local terms are used, they should be defined. The following data should be included.

a. Boundaries of the site and methods by which these boundaries have been defined.

b. The immediately surrounding environment, both as it probably was when the site was in use and as it is today.

c. Any disrupting influences (urban development, roads, agriculture) at work on or immediately around the site.

d. Descriptions (or summaries) of known data on internal characteristics: stratigraphy, artifact classes and their distribution, structural remains, etc.

e. Extent and nature of any excavation, testing, surface collecting, etc.

f. Descriptions of any standing or ruined structures or buildings that might be of architectural or historic importance.

3. A list of pertinent previous investigations a the site, if any, indicating dates, institutions, or organizations responsible, and bibliographic references.

4. Quality and intensity of survey that resulted in recording the site; any limitations this may impose on the data available for purposes of evalutaion.

C. *Historic site descriptions* should include discussion of the present condition of the site and its environment. The integrity of the site—the degree to which the setting is a visual reminder of the events and activities that took place there—is very important and should be thoroughly discussed in the submission.

D. *District*—1. *Architectural and historic district* descriptions should include the following kinds of information, as appropriate:

a. General description of the natural and manmade elements of the district: structures, buildings, sites, objects, prominent geographical features, density of development.

b. General description of types, styles, or periods of architecture represented in the district: scale, proportions, materials, color, decoration, workmanship, design quality

c. General physical relationships of buildings to each other and to the environment: facade lines, street plans, squares, open spaces structural density, plantings, important natural features; changes in the relationships over time. Some of this information may be provided on a sketch map.

d. General description of the district during the period(s) when it achieved significance

e. Building types found in district: commercial residential, etc.; present and original uses of buildings and land.

f. General condition of buildings: restoration or rehabilitation activities, alterations.

g. Approximate number of buildings in district or a good indication of size of district.

h. Intrusions: include ratio and size of intrusions compared to the number of buildings within the district.

i. Qualities that made the district distinct from its surroundings.

j. A list of significant pivotal buildings within the district, with short descriptions where appropriate.

k. Precise verbal boundary description: streets, property lines, inclusive street addresses, geographical features, etc., which separate the district from its surroundings.

l. If the district also has qualities of an archeological nature, the information indicated under 4 below should be provided.

2. *Industrial district* descriptions. In addition to the information listed should include:

a. General description of the industrial activities and processes taking place within the district, important natural and geographical features, power sources;

b. General description of original machinery still in use; and/or

c. General description of linear systems within district (canals, railroads, roads) and their terminal points with approximate length and width of area to be encompassed in district.

3. *Rural district* descriptions. In addition to the information listed above, should include:

a. General description of geography and topographical features (valleys, vistas, etc.) that convey a sense of cohesiveness; and or

b. General description of the outbuildings and other examples of vernacular rural architecture within district boundaries.

4. *Archeological district* descriptions should include:

a. General description of the natural and manmade elements of the district: structures, buildings, sites, objects, prominent geographical features, density of development.

b. A statement of the date, level, and kind of archeological survey that has been done in the district.

c. A list of archeological properties within the district, including their locations. Data on individual sites, as required by section VII. B, should be appended.

d. A statement of the cultural, historic or other relationships among the sites within the district that make the district a cohesive unit for investigation.

e. A summary of the nature and level of damage the sites within the district have received or are receiving.

f. A statement of the extent to which the intersite relationships that give the district its cohesion remain intact.

VIII. SIGNIFICANCE

A. *Summary statement of significance.* A statement of significance identifies qualities of the property that may make it eligible for listing in the National Register. A concise opening paragraph summarizing the possible importance of the property being considered should be followed by a more detailed account of the events, personalities, prehistoric or historic occupations, or activities associated with the property. This concise history of the property should be directed to a whole property, rather than some functional segment. Thus, it is inappropriate to discuss a mound and not an associated village, burial area, etc., or to submit a house and not the associated outbuildings, etc.

A statement of significance should attempt to relate the property to a broad historical, architectural, archeological, or cultural context, local, regional, State, or national. For example, if a community has a number of neighborhoods with the same or similar qualities as the one being evaluated, this information should be included in the documentation. Any quoted material which appears in this section or the description should be footnoted. Quotations taken out of context must faithfully represent the meaning of the original source. Supplemental information, such as newspaper articles, letters from professional historians, architects, architectural historians, or archeologists, etc., may also be submitted as appropriate. The statement of significance for properties that are less than 50 years old; moved; reconstructed; cemeteries and grave sites; birthplaces; primarily commemorative in nature; or owned or used by religious institutions should address the specific exceptions set forth in the National Register criteria.

B. *Period(s) and Area(s) of significance.* Identify the area(s) and period(s) with which the property's significance is associated. This may mean date of construction, major alterations, or association with an individual, event, or culture, etc. For some archeological properties, assignment to a very general time period or periods may be sufficient.

The following areas of significance are listed on National Register forms. Agencies may find it helpful to consider these areas in identifying and evaluating properties:

Archeology-Prehistoric: The scientific study of life and culture of indigenous peoples before the advent of written records.

Archeology-Historic: the scientific study of life and culture in the New World after the advent of written records.

Agriculture: farming, livestock raising, and horticulture.

Architecture: the style and construction of buildings and structures.

Art: concerning creative works and their principles: fine arts and crafts. Do not include architecture, sculpture, music, or literature here; specific categories are established for these areas.

Commerce: production and exchange of goods and the social contracts thereby encouraged.

Communications: art or science of transmitting information.

Community Planning: the design of communities from predetermined principles.

Conservation: official maintenance or supervision of natural or manmade resources.

Economics: the science that deals with the production, distribution, and consumption of wealth.

Education: formal schooling or the methods and theories of teaching or learning.

Engineering: the applied science concerned with utilizing products and sources of power for supplying human needs in the form of structures, machines, etc.

Exploration Settlement: the investigation of regions previously unknown; the establishment of a new colony or community.

Industry: enterprises producing goods and services.

Invention: something originated by experiment or ingenuity. (Properties connected with the inventors themselves would be classified here.)

Landscape Architecture: the art or practice of planning or changing land and water elements for the enhancement of the physical environment.

Literature: the production of writings, especially those of an imaginative nature.

Military: concerning the armed forces and individual soldiers.

Music: the art of combining vocal or instrumental sounds or tones.

Philosophy: system of principles for the conduct of life; the theory or analysis of the principles underlying thought or knowledge and the nature of the universe.

Politics/Government: an established system of political administration by which a nation, State, district, etc., is governed and the processes which determine how it is to be conducted.

Religion: systems and expressions of belief in a suprahuman power that have made a contribution to the patterns of culture.

Science: a systematic study of nature.

Sculpture: the art of forming material into three-dimensional representation.

Social/Humanitarian: concerning human beings living together in a group or the promotion of the welfare of humanity.

Theater: the dramatic arts and the places where they are enacted.

Transportation: concerning the work or business or means of conveying passengers or materials.

C. Additional facts to be included on specific categories of properties, as appropriate:

1. *Buildings, structures, or objects.* a. The architect or builder, if known.

b. Historically significant events and/or patterns of activity.

c. Data concerning individuals significantly associated with the property.

d. Consideration of any possible archeological significance present.

2. *Sites.* a. A statement of the kinds of information known or thought likely to be present in the property; types of data that might be recovered if the property were thoroughly investigated by archeologists, art historians, architectural historians, or other appropriate scholars. Some categories of information will be directly observable; others can be inferred based on knowledge of similar properties that have been extensively investigated. Reasons for believing that given categories of information are present and have been preserved in the property should be given.

b. A statement of the relationships between the information believed to be present in the property and topics that might be studied there; i.e., what kinds of research could be done using the information known or thought to be present in the property.

3. *Architectural and historic districts.* a. Concise statement of why the district may be significant.

b. Origins and historical development of the district: inclusive dates, architects, builders, designers, planners; relationships of district to historic development of the area.

c. General analysis of architectural styles or periods. If possible, relate the architecture in the district to the architectural resources of the area.

d. Significant people or events associated with the district as a whole or with individual elements within the district.

e. Preservation and/or restoration activities in the district (if considered to contribute to the significance for which the district is submitted).

f. Effect of intrusions on the integrity of the district.

g. Explanation of how district boundaries were chosen. Considerations may include the presence of a natural barrier or edge, such as a highway or new development, change in character of the area, or decline in concentration of significant properties to the point where the integrity of the district has been lost. (You may wish to refer to qualities discussed under VII. D. 1. k.). If the area on which the determination request is made appears to be only part of a larger district, this should be noted with an explanation (for example, the project may affect only part of the district). If possible the relationship of this part of the district to the whole should be discussed.

h. Consideration of any possible archeological significance present in the district.

4. *Archeological districts.* a. A summary statement concerning the significance of individual properties within the district. (Data on individual properties meeting the standards set forth in VIII. C. 2).

b. A concise statement of the characteristics that give the district cohesion as a unit for study; what categories of data might be derived from study of the district that would not be derived from the study of individual properties within it?

c. A concise statement explaining the scientific and or interpretive yield or potential of the district in terms of the cultural and natural contexts or interrelationships described in VII. D. 4. d.

d. Consideration of any possible architectural or historic significance present in the district, above and beyond its value for information purposes.

e. An explanation of how district boundaries were chosen should be included. Considerations may include presence of a natural geographic barrier, such as a river or drainage divide; a project boundary if this delineates a group of resources which conform to the definition of a district given above; manmade features such as a highway or other structure; or decline in settlement density.

D. Federal agencies should attempt to answer the following questions when seeking to determine whether a property meets National Register criteria.

1. *Building, structure, object.* a. If a building or structure is submitted for its architectural qualities, does it retain enough of its significant design, aspect, or feeling to be recognizable? If not, could the important elements of design or appearance be restored? (This does not mean that buildings which have additions or alterations are not eligible, as they may reflect later significant styles and design).

b. If a building or structure is submitted for historical associations, does the existing building have an identifiable relationship to the history described? Does it retain sufficient integrity to convey the feeling of the historical period when it achieved significance?

c. If a building or structure is significant because of its association with an individual, how long did that individual live there, or how long was he associated with the building, and during what period of his life? Are there other properties in the vicinity which also have strong associations with the individual? If so, the significance of the property in question should be compared to the significance of these other properties.

d. If a building, structure, or object is submitted for its archeological associations, does it contain attributes that are amendable to study in order to extract important information about history or prehistory? For example, has it been rebuilt or added to in ways that reveal changing concepts of style or beauty? Does it contain tools, equipment, furniture, trash or other materials whose distributions could be studied to learn about the social organization of its occupants, their relations with other people and groups, their daily lives, etc.?

e. Does the building, structure, or object have an unusually important association with its location?

f. If the building or structure is no longer at its original location, are the reasons for the move fully explained? How does the new location affect the historical and architectural integrity of the building or structure?

g. What was the building or structure used for during the period it achieved historical significance?

2. *Site.* a. How does the site relate to the significant event, occupation, or activity that took place there?

b. How have alterations (destruction of original buildings, change in land use, changes in foliage or topography) affected the integrity of the site? (The site of a treaty signing which took place in a deep woods is probably not eligible if the area is now a suburban development).

c. If the site has been submitted for its archeological significance, has the site contributed or does it have a potential for contributing important information regarding human ecology, culture history, or culture process? What is the potential information yield of the site, and how does this information potential relate to theories, problems, and research questions that could be or have been addressed in the region or elsewhere? Evidence supporting these evaluations of significance should be provided, including references to specific scholarly investigations.

d. Does an excavated site retain interpretive value or did the information yielded make a fundamental contribution to knowledge of American cultures, such that the act of investigation constituted a historic event? Sites already completely excavated are eligible only if the answers to these questions are positive.

3. *District* (In addition to the questions on individual buildings, structures, and objects) a. How does the district convey a sense of historic and architectural cohesiveness (through design, setting, materials, workmanship, association, etc.) Is this sense expressed in the statement of significance?

b. How do architectural styles or elements within the district contribute to the feeling of time and place?

c. How have significant individuals or events contributed to the development of the district?

d. How has the district affected the historical development of the overall community, region, or State?

e. What effect do intrusions have on the integrity of the district?

f. How were district boundaries chosen? (Considerations may include boundaries at specific time in history; the presence of a visual barrier or edge, such as a river, highway or new development; change in character of the area; or decline in concentration of significant properties to the point where the integrity of the district has been lost.)

g. Are the qualities that distinguish the district from its surroundings identified and described?

h. If the district has been submitted for its research value, do the sites or individual resources have cohesion as a unit for study or do they have an identifiable geographical relationship? Questions on individual sites under VIII. D. 2 above should also be answered for districts.

i. How does the district compare to other similar areas in the State, region, or locality?

4. *Industrial districts* (In addition to the questions above). a. How do the industrial functions or processes relate to the broader industrial or technological developments of the county, region, State, or the Nation?

b. How important are the entrepreneurs, engineers, designers, and planners who contributed to the development of the district?

5. *Rural* (In addition to the questions above). a. How are the elements of the rural district linked historically, architecturally, by function, or by common ethnic or social background?

IX. BIBLIOGRAPHY

The bibliography should contain a list of sources from which information on the property was compiled. General reference works on architecture, archeology, etc., should not be included unless they provide specific information which is of assistance in evaluating the property. Use standard bibliographical style, listing author, full title, date and location of publication, and publisher. For an article, list the magazine or journal from which it was taken, volume number and date. For unpublished manuscripts, indicate where copies are available. Interviews should be listed here with the date of interview.

X. GEOGRAPHICAL DATA, MAPS, AND ACREAGE

A map clearly locating the property within a city or broader context must accompany each request. A 7.5 or 15 minute series United States Geological Survey map, State highway map, or other suitable map will be acceptable. Latitude and longitude coordinates or UTM (Universal Transverse Mercator) reference points are useful in identifying the geographical location of properties. Photocopies of maps are acceptable provided they are clear and properly referenced. If the property is a district, a detailed sketch map should be included. The sketch map need not be precise in scale, but it should indicate:

A. All buildings, structures, or sites in the district.

B. Extent of district boundaries, carefully drawn.

C. Street and place names, including inclusive street numbers.

D. Highway numbers.

E. Architectural styles or periods, if appropriate.

F. Pivotal structures and important spaces (parks, squares, etc.).

G. Present type of district (mixed, residential, commercial, public, etc.).

H. Intrusions or other elements not contributing to the significance of the district.

I. North arrow (magnetic or true), if not printed on map.

J. Approximate scale.

K. Land use in rural district—woods, fields, swamps, etc.

L. Significant aspects of the natural environment, if appropriate. Sketch maps should also be provided for large archeological sites, indicating significant cultural features and intrusions. Maps of archeological districts should clearly indicate the areas within the district boundaries which have actually been surveyed. If portions of the districts have been inspected using different techniques or at different levels of intensity, this should be indicated on maps.

Acreage. The acreage of the property in question should also be given.

XI. PHOTOGRAPHS

Along with written documentation and maps, photographs form the basis of the Secretary of the Interior's determination of a property's eligibility for inclusion in the National Register. For this reason, photographs submitted should give an honest visual representation of the property and should illustrate those qualities discussed in the description and statement of significance. Photographs should be contemporary with the request for a determination of eligibility and should be identified in detail, giving the name and location of the property, view or detail shown, and direction of photo. Historical photographs may also be useful but are not required. Black and white glossy photographs are preferred since these are required for National Register nominations, but other photo formats are also acceptable. Xeroxed copies of photographs rarely provide sufficient detail to accurately portray a property and should therefore be avoided. The number of photographs required for a determination varies according to the complexity of the property:

A. *Individual buildings, structures, or objects.* Include only as many photographs as are necessary to depict the property clearly. One of the photographs should show the environment or context in which the property is located. Additions, alterations, intrusions, and dependencies should appear in the photographs. If the significance for which the property is submitted includes interiors or particular details, representative views should be included.

B. *Archeological Sites.* Photographs should document the condition of the property and, if relevant to the evaluation of significance, show artifacts that have been recovered and features present in the site. Drawings may be substituted for photographs of artifacts or other features where relevant and if it is not possible to take photographs. Site submissions must include at least one photograph, however, showing the physical environment and configuration of the site.

C. *Districts.* Districts should be represented visually in selected street, landscape, or aerial views. Include as many photographs as necessary to visually relate the essence of and the variety included in the district. Views of individual structures may not be necessary as streetscapes often reveal the architectural qualities of a district better than photographs of individual buildings. Pivotal structures, however, and elements, which help define the quality of the district should be clearly shown. Streetscape views should include as many building types, styles, and uses as necessary to relate the variety of the district. Photographs of important topographical or spatial elements should be included as well as representative types of intrusions in their settings. It is useful to indicate on the sketch map the location and direction of view of photographs. Views of archeological districts should show significant natural and/or cultural aspects of the environment and typical sites, structures, buildings, and objects.

XII. INDIVIDUAL(S) COMPILING DOCUMENTATION

Names and qualifications of persons directly involved in compiling information on the property should be submitted, as this information may be of assistance in the evaluation process. Addresses and phone numbers are also useful so that these individuals may be consulted if questions arise concerning the documentation.

XIII. OPINION OF THE STATE HISTORIC PRESERVATION OFFICER

A statement of the opinion of the State Historic Preservation Officer concerning the eligibility of a property for inclusion in the National Register should be included with the request, where possible. The following sample form letter may be a convenient format for submitting this opinion.

Sample form letter for:

Statement of the opinion of the State Historic Preservation Officer concerning the eligibility of a property for inclusion in the National Register.

I understand that the .... is
agency

requesting the opinion of the State Historic Preservation Officer concerning the eligibility of .... for inclusion in the Na-
property(ies)

tional Register and that my opinion may be submitted to the Secretary of the Interior with a formal request for a determination of eligibility on this property. This statement confirms that I have been consulted as part of the determination of eligibility process.

—(1) In my opinion, the property is eligible for inclusion in the National Register. Below is a justification for this opinion.

—(2) In my opinion, the property is not eligible for inclusion in the National Register. Below is a justification for this opinion.

—(3) I have no opinion and prefer to defer to the opinion of the Secretary of the Interior.

Justification and comments:

Signed: ....
State Historic Preservation Officer

....
Date

Approved: June 10, 1977.

ERNEST ALLEN CONNALLY,
Acting Director
National Park Service.

[FR Doc.77-27246 Filed 9-20-77;8:45 am]

A.3.5
Text of the Pennsylvania Historic Preservation Act of 1978

Official Advance Copy of Statute Enacted at 1978 Session

No. 1978-273

AN ACT

HB 1249

Imposing powers and duties on the Pennsylvania Historical and Museum Commission with respect to historical preservation: establishing the Historic Preservation Board and prescribing its powers and duties: providing for archeological field investigations on public land: requiring notice before certain property can be transferred: providing for inter-agency cooperation and providing penalties.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Short title.

This act shall be known and may be cited as the "Historic Preservation Act."

Section 2. Findings and declaration of policy.

It is hereby determined and declared as a matter of legislative finding and policy that:

(1) Section 27 of Article I of the Constitution of Pennsylvania makes the Commonwealth trustee for the preservation of the historic values of the environment.

(2) The conservation of Pennsylvania's historic heritage and the preservation of public records, historic documents and objects of historic interest, and the identification, restoration and preservation of architecturally and historically significant sites and structures are duties vested primarily in the Pennsylvania Historical and Museum Commission.

(3) The irreplaceable historical, architectural, archeological and cultural heritage of the Commonwealth should be preserved and protected for the benefit of all of the people, including future generations.

(4) The preservation and protection of historic resources within the Commonwealth promotes the public health, prosperity and general welfare.

(5) The rapid social and economic development of our contemporary society threatens to destroy the remaining vestiges of our historic heritage.

(6) It is in the public interest for the Commonwealth, its citizens and its political subdivisions to engage in comprehensive programs of historic preservation for the enjoyment, education and inspiration of all the people, including future generations.

Section 3. Definitions.

The following words and phrases when used in this act shall have, unless the context clearly indicates otherwise, the meanings given to them in this section:

"Archeological field investigation." The study of human culture at any archeological site by means of surveying, digging, sampling, excavation or removing archeological specimens.

"Archeological specimens." All artifacts, remains, objects or any other evidence of historic, prehistoric, or anthropological value, whether found above or below the surface of the earth.

"Commission." The Pennsylvania Historical and Museum Commission.

"Historic preservation." The research, restoration, rehabilitation and other activities furthering the protection, enhancement, continued existence or enjoyment of historic resources.

"Historic resources." Any building, structure, object, district, place, site or area significant in the history, architecture, archeology or culture of the Commonwealth, its communities or the Nation.

"Pennsylvania Register of Historic Places." A selected inventory of historic resources determined by the commission to be significant in the history, architecture, archeology or culture of the Commonwealth, its communities or the Nation.

"Private organizations." Any organization constituted to engage in historic preservation.

"Public officials." Officers, agents and employees of the Federal Government, Commonwealth of Pennsylvania, its counties, townships, municipalities and other political subdivisions.

Section 4. The Pennsylvania Historical and Museum Commission.

The commission shall be the agency primarily responsible for the initiation, encouragement, support and coordination of historic preservation efforts in the Commonwealth.

Section 5. Powers and duties of the commission.

(a) The commission shall have the following powers and duties:

(1) Initiate and coordinate a Statewide survey to identify and document the historic resources in the Commonwealth, whether publicly or privately owned.

(2) Compile, maintain, continually revise and publish a selected inventory of significant historic resources in the Commonwealth, to be known as the Pennsylvania Register of Historic Places, pursuant to a criteria of significance approved by the commission.

(3) Conduct research and compile documentation regarding historic resources.

(4) Prepare a comprehensive plan for the preservation of the historic resources within the Commonwealth, including suggested priorities for the allocation of public and private financial resources.

(5) Undertake the activities necessary to qualify the Commonwealth for participation in programs and sources of Federal assistance for historic preservation purposes.

(6) Provide information and advice on historic resources and

historic preservation to public officials, private individuals and organizations.

(7) Advise public officials regarding the planning and implementation of undertakings affecting historic resources.

(8) Provide technical and financial assistance to public officials, private individuals and organizations engaged in historic preservation activities.

(9) Undertake activities to stimulate public interest in historic preservation, including publications, newsletters and conferences.

(10) Coordinate and comment upon activities of public officials affecting historic resources and preservation activities.

(11) Solicit, receive and utilize funds from any public or private source for historic preservation purposes.

(12) Acquire easements in historic resources and associated properties by gift, purchase, devise, bequest or any other lawful transfer when acquisition is necessary for the preservation of the historic resource.

(13) Rent or lease historic resources and associated properties for historic preservation purposes.

(14) Contract with public officials, agents or other states, private individuals and organizations for historic preservation purposes.

(15) Develop a comprehensive plan and program for the protection and investigation of archeological resources within the Commonwealth.

(16) Issue appropriate regulations for the implementation of this section.

(b) Notwithstanding any other provisions of this act, a historical resource shall be placed on the Pennsylvania Register of Historic Places only with the approval of the owner.

Section 6. Historic Preservation Board.

There is hereby established a Historic Preservation Board, composed of no less than nine citizens designated by the commission, pursuant to recommendations by the State Historic Preservation Officer. The membership shall include at least one member with demonstrated competence in each of the following disciplines: architecture, archeology, architectural history, history and historic preservation.

Section 7. Powers and duties of the Historic Preservation Board.

The Historic Preservation Board shall have the following powers and duties:

(1) Advise the commission on criteria of significance for inclusion of historic resources in the Pennsylvania Register of Historic Places.

(2) Review and recommend nominations of historic resources within the Commonwealth to the National Register of Historic Places.

(3) Review and comment upon the commission's comprehensive preservation plan for historic resources within the Commonwealth.

(4) Undertake such other activities determined by the commission to

be necessary or desirable for the preservation of historic resources within the Commonwealth.

Section 8. Term and compensation of Historic Preservation Board members.

Members of the State Historic Preservation Board shall serve for a term of two years without compensation, other than reimbursement for actual and necessary expenses incurred in the performance of their duties.

Section 9. Archeological field investigation on public land.

(a) The Commonwealth reserves to itself the exclusive right to conduct archeological field investigations on archeological sites owned or controlled by it, its agencies, departments and institutions in order to protect and preserve archeological specimens and information, which shall remain the property of the Commonwealth and shall be utilized for scientific and public educational purposes.

(b) The commission shall be the agency responsible for the preservation, protection and proper investigation of archeological sites located on land owned or controlled by the Commonwealth's agencies, departments and institutions.

(c) The commission shall conduct a survey of archeological sites located within the Commonwealth, and may make available the results of such a survey to all agencies of the Commonwealth and its political subdivisions that, in the opinion of the commission, may conduct activities which would affect such archeological sites.

(d) The commission may issue permits for archeological field investigations, subject to such restraints and conditions as it may prescribe; provided that such activity is undertaken with a view toward disseminating the knowledge gained through such undertakings; and provided that a summary written report of such undertakings, containing relevant maps, documents, drawings, and photographs be submitted to the commission; and further provided that all archeological specimens collected pursuant to such permit shall be the exclusive property of the Commonwealth, which through the commission shall make appropriate arrangements for their appreciation and study.

Section 10. Cooperation with the commission.

All public officials shall cooperate fully with the commission in the preservation, protection and investigation of archeological sites and to that end:

(1) Notify the commission before undertaking any Commonwealth, Commonwealth assisted, licensed or contracted project that may affect archeological sites.

(2) When any public official is aware that any undertaking in connection with any Commonwealth, Commonwealth assisted, Commonwealth licensed or contracted project, activity or program affects or may affect archeological sites, the official shall notify the commission and shall provide the commission with information concerning the project, program or activity. The provision of this section

shall be known to all contractors and other agents whose activities may affect archeological sites.

(3) The commission, upon notification or determination that archeological sites are or may be adversely affected, may within 60 days after reasonable notice to the responsible public official conduct or cause to be conducted a survey or other investigations to recover, preserve or otherwise protect information from the archeological site.

Section 11. Criminal penalties.

Any person who shall conduct field investigation activities on any land owned or controlled by the Commonwealth, without first obtaining a permit therefore from the commission or any person who shall appropriate, deface, destroy or otherwise alter any archeological site or specimen located upon lands owned or controlled by the Commonwealth, except in the course of activities pursued under the authority of a permit granted by the commission, shall be guilty of a misdemeanor punishable by a fine not exceeding $500 or by imprisonment for a period not to exceed six months or both, and in addition, shall forfeit to the Commonwealth all archeological specimens, collected or excavated together with any photographs and records relating to such specimens.

Section 12. Transfer of Commonwealth owned land involving historic resources.

(a) The Commonwealth, its agencies, departments, bureaus, instrumentalities, officials, agents or employees shall give the commission timely notice of proposed transfers of Commonwealth owned or controlled real property under their jurisdiction.

(b) The Commonwealth, its agencies, departments, bureaus, instrumentalities, officials, agents or employees may, upon recommendation of the commission, condition the transfer and may execute such covenants, deed restrictions or other contractual arrangements as will most likely result in the preservation of any historic resources located on or under the property to be transferred.

Section 13. Inter-agency cooperation.

All agencies, departments, bureaus, commissions, instrumentalities, agents and employees of the Commonwealth shall:

(1) Consult the commission before demolishing, altering or transferring any property under their jurisdiction that is or may be of historical, architectural, archeological or cultural significance.

(2) Seek the advice of the commission on possible alternatives to the demolition, alteration or transfer of property under their jurisdiction that is on or may be eligible for the Pennsylvania Register of Historic Places.

(3) Initiate measures and procedures to provide for the maintenance, through preservation, rehabilitation or restoration, of historic resources under their ownership or control that are listed on or are eligible for the Pennsylvania Register of Historic Places.

(4) Institute procedures and policies to assure that their plans,

programs, codes, regulations and activities contribute to the preservation and enhancement of all historic resources in the Commonwealth.

(5) Submit the procedures and policies described in paragraphs (2) and (3) to the commission for review and comment.

Section 14. Enforcement of historic preservation laws and policies.

The Attorney General, the commission, any political subdivision of the Commonwealth, any person, partnership, corporation, association or other legal entity may maintain an action in any administrative tribunal or court of competent jurisdiction for the protection or preservation of any historic resource in the Commonwealth.

Section 15. Constitutional construction.

The provisions of this act shall be severable and, if any of the provisions thereof shall be held unconstitutional, such decisions shall not affect the validity of any of the remaining provisions of this act. It is hereby declared as the legislative intent that this act would have been adopted had such unconstitutional provisions not been included therein.

Section 16. Effective date.

This act shall take effect immediately.

APPROVED—The 22nd day of November, A. D. 1978.

MILTON J. SHAPP

APPENDIX B

Professional Qualifications, Standards, Code of Ethics

B.1 Minimum qualifications of a professional archaeologist

In the conduct of archaeological field investigations by contracting archaeologists or permit holders, the following will be considered the minimum qualifications for a principal investigator responsible for supervising the field and laboratory investigations and the preparation of the final report:

A) A graduate degree in anthropology, archaeology, or a closely related field; or equivalent training accepted for accreditation by the Society of Professional Archeologists.

B) At least sixteen months of professional experience or specialized training in archaeological field, laboratory, or library research, including:

1) at least four months of experience in general North American archaeology, and
2) at lease six months of field experience in a supervisory role;

C) A demonstrated ability to carry research to completion, usually evidenced by timely completion of thesis, research reports, etc.;

D) For either prehistoric or historic archaeology, the principal investigator should have had at least one year of experience in research concerning the relevant period.

B.2 Research Standards and Guidelines

The use of adequate and appropriate methods and techniques in survey, excavation, analysis, and curation is essential to insure the proper preservation of archaeological sites, artifacts, and information. Although various situations will require a range of approaches, certain minimum and basic standards must be adhered to, in order to protect irreplaceable scientific information. Failure by contractors or agencies to conform to these minimum standards may endanger the archaeological record and will certainly result in unfavorable recommendations by the PHMC and delay the review process and the progress of construction projects for which federal or state-mandated review is required. It is to the overall advantage of all parties -- agencies, planners, archaeologists, and the PHMC -- for contractors to conduct adequate investigations and submit reports of high quality.

B.2.1 Standards for Reports on Permitted Archaeological Investigations or Cultural Resource Studies

All reports submitted to the BHP in fulfillment of compliance requirements should conform to the following format:

1. TITLE PAGE identifying:

   a) title describing the area and nature of work (e.g., Bald Eagle Valley 148 kv Transmission Line Survey)
   b) principal author(s)
   c) sponsoring contract agency or institution with contract number
   d) BHP assigned project environmental review number (ER #)

2. ABSTRACT briefly summarizing the results and significance of the work completed

3. INTRODUCTION describing the scope and purpose of the project as well as review of pertinent background information, e.g., the natural environment, previous research on the subject, etc.

4. METHODOLOGY summarizing field and laboratory procedures (if appropriate) utilized to achieve the goals of the investigation

5. RESULTS including a quantitative and qualitative description of findings (e.g., artifacts, features, sites, etc.); pertinent maps, drawings and photographs (see below); and a pedological description of the project area to include a discussion of soil development in areas bearing the potential for stratified deposits, but not where *de facto* stratigraphy has been archaeologically demonstrated.

6. INTERPRETATION and CONCLUSION assessing the results in terms of existing knowledge of the culture and area under study; the relationship of the results to broader scientific problems; the significance (National Register eligibility) of subject site(s), when appropriate; an assessment of potential project impact, if relevant; and recommendations for further work, if required.

7. REFERENCES CITED AND REFERENCES CONSULTED

Project reports must also present the following technical information:

1. Maps (with scale, directional arrow, legend of map symbols and source citation) including:

   a. general large-scale location map, e.g., state map

   b. original or copied 7.5 min. U.S.G.S. map depicting project and investigation limits

   c. detailed maps of areas of intensive survey or excavation, including site maps with site boundaries, cultural features, relevant topographic features, surface artifact distribution, test units, grid system, datum, etc.

2. Profile drawings of test units including scale, legend of symbols and direction of view

3. Pertinent black and white original photographs produced in at lease a

3" x 5" format

4. Artifact inventory organized by test unit and level

5. Typed P.A.S.S. forms

6. Description of provisions made for the disposition of artifacts and field records

B.2.2 Criteria for Review of Archaeological Reports by the PHMC

1) Are the methods and techniques of the investigation adequately justified and described?

2) Is the research design coherent? Are the methods and results appropriate to the purposes and goals?

3) Is the environmental and cultural context adequately described?

4) Has previous related investigation been considered and in corporated into the work?

5) Has the present investigation been related to the broader theoretical, methodological, or descriptive concerns in anthropology, archaeology, or history listed in the study unit summaries (Volume II)?

6) Are all sites adequately described and mapped?

7) Are artifact inventories, photographs, drawings, and descriptions presented?

8) Are artifacts described according to the standard categories and nomenclature and labelled with standard PHMC inventory numbers?

9) Are artifacts and sites recorded using the standard PHMC coded and numbers?

10) Are artifacts, sites, features and their distribution interpreted in terms of human cultural behavior?

11) Are sites placed in their environmental and cultural (historical) context?

12) Are statistical manipulations and special techniques correctly applied and described?

13) Is the significance of sites adequately justified by reference to previous research, the type and quantity of data derivable, and the relevance of these data to broad anthropological/archaeological problems?

14) Is the potential impact of the project on a site fully considered?

15) Do the recommendations reflect a careful and accurate evaluation of the nature and degree of impact on archaeological sites?

16) Is the potential National Register eligibility of all sites considered?

17) Are maps, photographs, and drawings appropriate, clear, and adequately labelled?

18) Is the list of references and persons consulted complete?

19) Is the disposition of artifacts clearly described? Are provisions for storage and curation adequate?

20) Have site forms been included or provided separately?

B.2.3 Standards for the Conduct of Research (loosely adapted from SOPA standards).

1) No archaeological investigations may take place on Commonwealth lands without a permit from the PHMC (see PHMC regulations on archaeological permits in Appendix H), on federal lands without a permit (see the provisions of the Archaeological Resources Protection Act referenced in Appendix A), or on private lands without the permission of the landowner. The PHMC further suggests that any persons planning any activity affecting archaeological resources notify and consult with the PHMC, the Bureau for Historic Preservation, or the State Archaeologist to insure that such activities are in conformance with archaeological and preservation standards.

2) All archaeological investigations should be conducted according to a complete and formal research design. This is required of all investigations subject to review by the PHMC and strongly suggested for all research in order to protect scientific information and meet the standards of professional archaeology. The research design should:

a) specify the purpose and objectives of the research;

b) incorporate the results of previous relevant literature and research;

c) outline a methodology, appropriate to the purposes and objectives of the research, to insure the economical use of the resource base;

d) establish the environmental and cultural context of the proposed investigations;

e) estimate the expense of the proposed investigation and incorporate this estimate in a detailed budget;

f) estimate and detail the staff, equipment, and facilities needed to adequately complete the research;

g) explain how the proposed investigations will contribute to understanding of broader anthroplogical or archaeological themes.

3) The archaeologist has a responsibility to adequately prepare for the proposed investigation by:

a) a background literature and archival search,

b) estimating as accurately as possible the time, effort, staff, equipment, and funds necessary to complete the research,

c) obtaining all necessary permits and (and owner permissions(s),

d) recognizing and adhering in planning to all relevant state, federal, and local laws and regulations, and

e) making arrangements for the curation of collected material. Compliance with these responsibilities as evidenced in the research proposal report is required for all investigations subject to PHMC review and strongly recommend for all archaeological work in the Commonwealth.

4) The archaeological field and laboratory studies should follow as closely as possible, given the possibility of unforeseen circumstances, the research design.

5) All field and laboratory methods should be fully and accurately described and recorded according to commonly understood nomenclature, in such a manner that they are intelligible and available to other researchers.

6) A grid system or other appropriate means should be used to record the provenience of all collected specimens. Both horizontal and vertical provenience as well as context and association must be recorded, such that stratigraphic and areal relations between artifacts, features, and sites are evident.

7) Appropriate visual records -- drawings, photographs, plans, and maps -- must be kept.

8) Consistent standards of excavation, survey, collection and recording should be applied throughout the investigation, regardless of the investigator's primary research interest.

9) Labelling and storage of specimens must be adequate to allow their correlation with field records, and permit association with other specimens. Specimens must be labelled according to the PHMC system (see Site File and Site Form information in Appendix C).

10) Immediate threats to the preservation of archaeological data -- vandalism, weather, etc. -- must be avoided or mitigated.

11) Field and laboratory studies should proceed as closely as possible according to the schedule in the research design.

12) Reports must be completed within a reasonable time following completion of the field and laboratory studies. Failure to complete the investigations or report within a reasonable time according to schedule may

be considered non-compliance with the terms of a Commonwealth-issued permit or with the requirements of federal or state regulations.

13) Archaeologists or the responsible agency or institution must make arrangements for the deposit of collected specimens at an institution with permanent and adequate facilities for curation. The Commonwealth, through the PHMC, reserves the right of first refusal and retains ultimate ownership of all sites located and specimens collected on Commonwealth lands. Archaeologists should consult with the PHMC on a list of acceptable institutions for the deposit of collections.

14) The archaeologist has a professional responsibility to disseminate and make available the results of archaeological research, by appropriate means -- journal articles, publication, reports at professional meetings, and personal correspondence -- subject to the conditions of contracts or permits. For Commonwealth permit-holders and contractors this obligation extends to the presentation of research results and interpretation to the general public (see permit regulations in Appendix H).

Compliance with the above standards is expected and required for all archaeological investigations which come under PHMC review. Failure to comply will lead to rejection of reports, unfavorable recommendations by the PHMC for contractors, non-issuance of permits or project approval and, consequently, delays to projects and permit applicants and holders. The best interests of all concerned are served by adherence to these standards.

B.3 Code of Ethics

In the conduct of all archaeological investigations under the review of the PHMC, the Commission recognizes the Society of Professional Archeologists (SOPA) Code of Ethics as the appropriate standard. This code has also been adopted by the Pennsylvania Archaeological Council. It is assumed, as a condition for the issuance of permits and the review of archaeological investigations, that archaeologists will adhere to the SOPA Code of Ethics: "Archeology is a profession, and the privilege of professional practice requires professional morality and professional responsibility, as well as professional competence, on the part of each practitioner."

B.3.1 The Archaeologist's Responsibility to the Public

An archaeologist shall:

a) recognize a commitment to represent archaeology and its research results to the public in a responsible manner;

b) actively support conservation of the archaeological resource base;

c) be sensitive to, and respect the legitimate concerns of, groups whose culture histories are the subject of archaeological investigations;

d) avoid and discourage exaggerated, misleading or unwarrented statements about archaeological matters that might induce others to engage in unethical or illegal activity;

e) support and comply with the terms of the UNESCO Convention on the means of prohibiting and preventing the illicit import, and transfer of ownership of cultural property, as adopted by the General Conference, November 14, 1970, Paris.

An archaeologist shall not:

a) engage in any illegal or unethical conduct involving archaeological matters or knowingly permit the use of her/his name in support of any illegal or unethical activity involving archaeological matters;

b) give a professional opinion, make a public report, or give legal testimony involving archaeological matters without being as thoroughly informed as might reasonably be expected;

c) engage in conduct involving dishonesty, fraud, deceit, or misrepresentation about archaeological matter;

d) undertake any research that affects the archaeological resource base for which he/she is not qualified.

e) submit a false or misleading, application for accrediation by, or membership in, the Society of Professional Archeologists.

B.3.2 The Archaeologist's Responsibility to her/his Colleagues

An archaeologist shall:

a) Give appropriate credit for work done by others;

b) Stay informed and knowledgeable about developments in his/her field or fields of specialization;

c) Accurately, and without undue delay, prepare and properly disseminate a description of research done and its results;

d) Communicate and cooperate with colleagues having common professional interests;

e) Give due respect to colleagues' interests in, and rights to, information about sites, areas, collections, or data where there is a mutual active or potentially active research concern;

f) Know and comply with all laws applicable to her/his archaeological research, as well as with any relevant procedures promulgated by duly constituted professional organizations;

g) Report knowledge of violations of this Code to proper authorities.

An archaeologist shall not:

a) Falsely or maliciously attempt to injure the reputation of another archaeologist;

b) Commit plagiarism in oral or written communication;

c) Undertake research that affects the archeological resource base unless reasonable prompt, appropriate analysis and reporting can be expected;

d) Refuse a reasonable request from a qualified colleague for research data;

e) Submit a false or misleading application for accrediation by or membership in the Society of Professional Archeologists.

B.3.3 The Archaeologist's Responsibility to Employers and Clients

An archaeologist shall:

a) respect the interests of his/her client, so far as is consistent with the public welfare and this Code and Standards;

b) refuse to comply with any request or demand of an employer or client which conflicts with the Code and Standards;

c) recommend to employers or clients the employment of other archaeologists or other expert consultants upon encountering archaeological problems beyond her/his own competence;

d) exercise reasonable care to prevent his/her employees, colleagues, associates and others whose services are utilized by her/him from revealing or using confidential information. Confidential information means information of a non-archaeological nature gained in the course of employment which the employer or client has requested by held inviolate, or the disclosure of which would be embarrassing or would be likely to be detrimental to the employer or client. Information ceases to be confidential when the employer or client so indicates or when such information becomes publicly known.

An archaeologist shall not:

a) reveal confidential information, unless required by law;

b) use confidential information to the disadvantage of the client or employer;

c) use confidential information for the advantage of himself/herself or a third person, unless the client consents after full disclosure;

d) accept compensation or anything of value for recommending the employment of another archaeologist or other person, unless such compensation or thing of value is fully disclosed to the potential employer or client;

e) recommend or participate in any research which does not comply with the requirements of the Standards of Research Performance.

B.4 Protection of Archaeological Site Locational Information

Agencies and contractors should make efforts to insure that sensitive site locational information is not disseminated to the public without adequate assurances that the information will be used only for research or contract purposes (see 36 CFR 800.15 and 36 CFR 61.8). Site locations should not be included in contract reports for general distribution. Site locational data is specifically exempt from the provisions of the Freedom of Information Act.

APPENDIX C

SURVEY AND SITE FILE INFORMATION

C.1. Pennsylvania Archaeological Site Survey

The Pennsylvania Archaeological Site Survey (P.A.S.S.) is a program of systematic archaeological site identification and recording. The results of the Survey are maintained in the site files of the PHMC at the State Museum as a reference for research, preservation, and planning. Access to the site files is available to qualified investigators for research on Pennsylvania archaeology and to the staff of the PHMC in the review of permit applications and land-use projects subject to the NHPA Section 106 and Commonwealth regulations.

The P.A.S.S. developed from a number of previous surveys and site recording systems in Pennsylvania. Earlier surveys have been described in Chapter 2 above and in Smith and Herbstritt 1977. The results of earlier efforts, representing a series of separate and uncoordinated surveys, had never been summarized and catalogued according to a uniform system. In 1948 the PHMC initiated a program of archaeological site recording using the standard Smithsonian trinomial system, paralleling a similar program by the Carnegie Museum for Western Pennsylvania. Not until 1967, however, did the PHMC come to an agreement with the Carnegie Museum to establish a unified and consistent site recording system for the entire state. Recording for the western part of Pennsylvania became the responsibility of the Carnegie Museum, while the PHMC at the State Museum took responsibility for the remainder of the Commonwealth. The results of this coordinated effort, incorporating the Upper Ohio Valley Archaeological Survey (Mayer-Oakes 1955), are embodied in the Pennsylvania Archaeological Site Survey. The maintenance of this survey is, according to the Pennsylvania Historic Preservation Act of 1978, part of the larger responsibility of the PHMC to inventory the Commonwealth's cultural resources. The site files at the State Museum have grown to record more than 11,000 prehistoric and historic archaeological sites.

The sites recorded in P.A.S.S. provide a body of data for researchers on Pennsylvania archaeology. They also serve, and are much more in use, as a means for reviewing state and federally-assisted or licensed projects which may affect archaeological sites. The staff of the BHP regularly reviews project proposals and contracts reports, using the information in the site files to check on known sites and to formulate predictive models of site location.

C.1.1. Procedure for Reporting Sites

A site, for the purposes of the site files is "any place, large or small, where a group of artifacts and/or detritus resulting from human activity is found," (Smith and Herbstritt 1977: 41; original emphasis). Thus a single artifact with associated detritus or a feature or a group of artifacts (two or more) or detritus (five or more pieces) constitutes a site and may be recorded. This includes both historic and prehistoric remains, although historic standing structures are normally recorded on a separate inventory.

Site location information is now centralized at the State Museum. All site information should be reported to the PHMC at that location. Anyone can report an archaeological site by submitting a completed site form to the PHMC. However, all investigators working under contract or permit are required to submit site forms as part of their reports. All professional archaeological investigators should consider the reporting of sites to the PHMC part of their professional responsibilities, regardless of their legal obligations.

C.1.2. Site File Forms

Figure 1, a-b is a facsimile of the P.A.S.S. form. These forms (obtainable from the PHMC) or copies (if necessary) should be submitted for each site located during field investigations.

C.1.3. PHMC Policy on Access To and Use of Site Files

The PHMC adopted the following resolution at a meeting on February 21, 1967:

"Any use of the archaeological site record files in the Archaeology Section of the State Museum, by private individuals or other institutions, shall require permission by the Section in response to a written request and statement of intent for use of the cases where scholarly purposes are clearly demonstrated. Such studies shall not include published descriptions of the precise locations of sites recorded in these files without the express written consent of the Section." (emphasis added)

This resolution was adopted in order to prevent the damage to archaeological sites which has resulted from uncontrolled use of site location information by curio-collectors. Access to the site files is granted upon written or adequate prior request only to researches with a legitimate scholarly interest in archaeology and subject to his/her signed acknowledgement of the following statement.

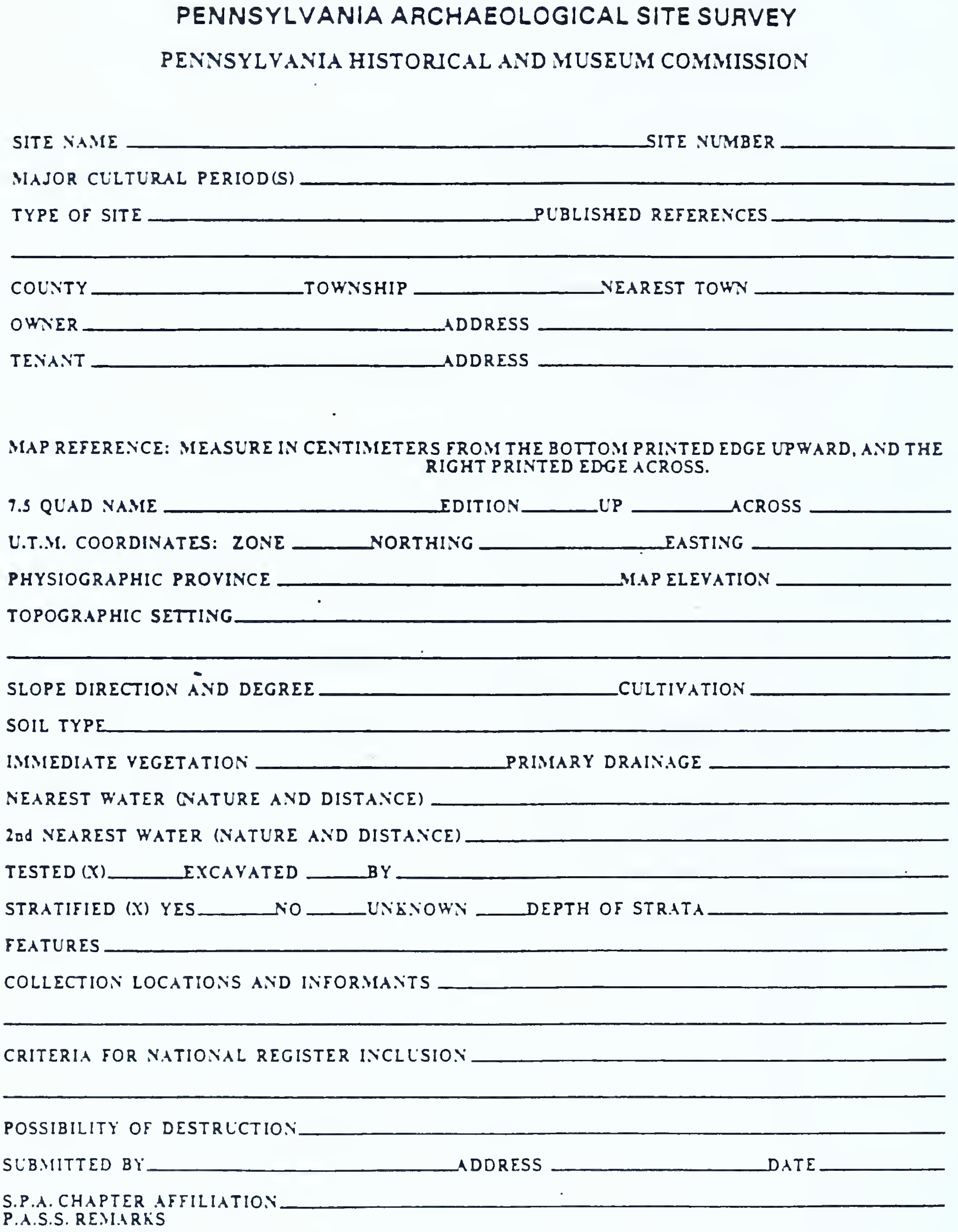
C.1.3.1. Restrictions Governing The Use of the P.A.S.S. Files

1) The results of research using site file information, as embodied in written reports, journal articles, books, or oral presentations, shall not include descriptions of precise site locations unless permission has been obtained from the PHMC.

2) The precise locations of sites listed in the files shall not in any way be disseminated to others, unless permission has been obtained from the PHMC.

3) The PHMC site files shall be cited as the source of site information in any publication, report, or presentation.

Figure C.1a
P.A.S.S. SITE FORM
Page 1



PENNSYLVANIA ARCHAEOLOGICAL SITE SURVEY

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

SITE NAME ______ SITE NUMBER ______
MAJOR CULTURAL PERIOD(S) ______
TYPE OF SITE ______ PUBLISHED REFERENCES ______
______
COUNTY ______ TOWNSHIP ______ NEAREST TOWN ______
OWNER ______ ADDRESS ______
TENANT ______ ADDRESS ______

MAP REFERENCE: MEASURE IN CENTIMETERS FROM THE BOTTOM PRINTED EDGE UPWARD, AND THE RIGHT PRINTED EDGE ACROSS.

7.5 QUAD NAME ______ EDITION ______ UP ______ ACROSS ______
U.T.M. COORDINATES: ZONE ______ NORTHING ______ EASTING ______
PHYSIOGRAPHIC PROVINCE ______ MAP ELEVATION ______
TOPOGRAPHIC SETTING ______
______
SLOPE DIRECTION AND DEGREE ______ CULTIVATION ______
SOIL TYPE ______
IMMEDIATE VEGETATION ______ PRIMARY DRAINAGE ______
NEAREST WATER (NATURE AND DISTANCE) ______
2nd NEAREST WATER (NATURE AND DISTANCE) ______
TESTED (X) ______ EXCAVATED ______ BY ______
STRATIFIED (X) YES ______ NO ______ UNKNOWN ______ DEPTH OF STRATA ______
FEATURES ______
COLLECTION LOCATIONS AND INFORMANTS ______
______
CRITERIA FOR NATIONAL REGISTER INCLUSION ______
______
POSSIBILITY OF DESTRUCTION ______
SUBMITTED BY ______ ADDRESS ______ DATE ______
S.P.A. CHAPTER AFFILIATION ______
P.A.S.S. REMARKS

(Over)

Figure C.1b

P.A.S.S SITE FORM

Page 2

SKETCH MAP OF SITE (WITH SOME POINT OF REFERENCE: HOUSE, ROAD, ETC., WHICH CAN BE RELATED TO THE 7.5 MIN. U.S.G.S. MAP, INCLUDING A SCALE AND APPROXIMATE ACREAGE).

LIST SPECIFIC CULTURAL COMPONENTS AND THE PRIMARY IDENTIFYING ARTIFACTS FOR EACH.

SKETCHES (WITH SCALE) OF MAJOR OR REPRESENTATIVE PROJECTILE POINT SHAPES.

LITHIC MATERIALS REPRESENTED AT THE SITE.

4) The researcher shall make every effort to insure that contracting agencies and companies understand the confidential nature of information on site locations.

5) Failure to comply with this policy may render the offender ineligible for further use of the site files and for the holding of archaeological permits.

6) The researcher shall list all site numbers and quad maps copied.

C.2. Instructions for Completing P.A.S.S. Forms

These forms are to be typed as accurately and completely as possible and submitted to:

Pennsylvania Archaeological Site Survey
Box 1026
State Museum of Pennsylvania
Harrisburg, Pennsylvania 17120

Archaeological sites should be spatially delineated in terms of specific occupation or use areas, which produce artifactural or other evidence of that occupation or use.

In cases where large unbroken distributions of artifacts seem to occur, e.g., river flats, an attempt should be made to find physical features (i.e., intermittent stream beds, alluvial fans, natural levees or terraces) or cultural distributions which could be used to isolate what would appear to be individual sites.

Frequently it will not be possible to discern such isolating factors which permit the definition of smaller site units. Even though such sites may seem (intuitively) too large they will need to be recorded as one site.

At a minimum a recorded site should consist of a quantity of actifactual lithic detritus, or other evidence of use or occupation. Isolated finds of artifacts ("hunting strays" or losses) in areas where no other artifacts occur, should not be recorded as a site, unless such specimens are unusual.

The surveyor should be generally familiar with "A Status Report on the Pennsylvania Archaeological Site Survey," by Ira F. Smith, III and James T. Herbstritt (1977), Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania. This publication provides additional and more specific definitions and explanations concerning this survey program.

Site Name -	Use current land owner's name, a previously established site name, or a name which is distinctive of the site.

Site Number -	Assigned by the PHMC after the form has been completed.
Major Cultural Period(s) -	Identify the major occupational period of the site, e.g., Archaic, Transitional, Late Woodland, Historic-Colonial, Historic-Indian, Historic-Industrial, etc. If major occupation cannot be identified list several, or unknown, or indicate mixed components.
Type of Site -	Indicate the nature of the site, i.e., rock shelter, open, stratified, cemetery, mound, extant building, foundation, quarry, etc., or which ever combinations thereof apply. (See Smith and Herbstritt, 1977, loc. cit.)
Published References -	Give author, title, place and date of publication.
County, Township, Nearest Town -	Fill in names.
Owner -	Name and address of present owner.
Tenant -	Name and address of occupant or tenant farmer if other than owner.
Map Reference -	See instructions on the form.
Universal Transverse Mercator -	(U.T.M.) - See Sande, Theodore Anton (1976) Industrial Archaeology: A New Look at the American Heritage. Battleboro, Vt. The Stephen Crane Press. (Appendix II)
Physiographic Province -	See Fenneman, Nevin M. (1938) Physiography of Eastern United States. McGraw-Hill Book Company, New York.
Map Elevation -	Height above mean sea level, from U.S.G.S. map (in feet).
Topographic Setting -	Being as specific as possible, describe the physical features at which the site is situated, e.g., terrace at stream junction, spring head on south facing slope, saddle, island, glacial terrace cut by intermittent streams, etc.
Slope Direction & Degree -	Give cardinal direction which downward

	slope is facing, and number of feet of drop per 100 feet.
Cultivation -	Indicate if site is under cultivation: now, never, previously, but not presently.
Soil Type -	Verbal description and or symbol from County Soil Survey, published by the United States Department of Agriculture.
Immediate Vegetation -	Type of vegetation present on the site, e.g., grass, weeds, forest, etc., or if cultivated describe below.
Primary Drainage -	Use one of the following: Lake Erie, Allegheny, Ohio, Monongahela, Youghiogheny, Juniata, West, North or main branch Susquehanna, Lehigh, Schuylkill, Delaware, Potomac.
Nearest Water -	Give approximate distance and direction to nearest source of water, Describe nature of water in terms of spring, swamp, extinct, or intermittent, low order or high order stream (a low order stream is very small). Give name if applicable.
2nd Nearest Water -	Give approximate distance and direction to second nearest source of water. The nature of this source should be described as above.
Tested ___ Excavated ___ -	Enter an X if testing or excavation of the site has been undertaken. Also give names of excavators and dates.
Stratified -	Indicate yes - no - unknown, and depth below surface of deepest culture-bearing stratum.
Features -	List any features (pits, burials, hearths, postmolds, etc.) discovered during testing or as reported by informants. Also describe any above-ground features which are visible or reported, e.g., mounds, stone foundations, etc.
Collection Locations & Informants -	Give names and addresses of collectors of Museums, etc., with collections from the site. Also list major

informants; if owner or tenant, enter "owner", or "tenant".

Criteria for National Register Inclusion - State briefly the characteristics of the site which would qualify it for inclusion on the National Register. (see suggested guidelines).

Possibility of Destruction - Mention known or anticipated factors which may cause the destruction of the site.

Submitted by - Name and address of person submitting this form. Date of submission.

S.P.A. Chapter Affiliation - Chapter to be credited for site for purposes of the Frances Dorrance Award.

P.A.S.S. Remarks - To be filled in by PHMC.

Reverse Side of Form

Sketch Map of Site - See instructions on the form.

List Specific Cultural Components - Describe according to published or accepted usage, the components of the site and primary identifying artifacts.

Examples:
Archaic-Brewerton -- Points, adzes
Middle Woodland-Jacks Reef -- Points, pottery
Late Woodland-McFate -- Incised pottery
Historic-Lenni Lenape -- Trade beads, gun flints

Sketches of Representative Projectile Point Shapes - Sketch (with scale) a typical example of the major (most numerous, or several most numerous) shapes (types) of projectile points (or knifes) found at the site. Also indicate the percentage of occurrence of each illustrated examples, if a sufficient sample exists. Indicate if no diagnostic shapes have thus far been found at the site. If the site is historic Indian, or colonial, or if industrial, or a quarry, describe any major identifying artifacts or features.

Lithic Materials - List the percentages of occurence of the various artifact or flake lithic materials (if a sufficient sample does not exist simply list the lithic materials). Give specific names (if they can be identified with reasonable certainty according to established or published names).

Examples:
Quartz %
Quartzite - Hardyston %
Chert %
Chert - Onondaga %
Siltstone %
Jasper - Bald Eagle Valley %
Rhyolite %

APPENDIX D

PREHISTORIC ARCHAEOLOGICAL SITES ON THE NATIONAL REGISTER AND PENNSYLVANIA INVENTORY

D.1. Introduction

The following sections contain the current (6/84) lists of prehistoric archaeological sites on the National Register of Historic Places (NR) and the Pennsylvania Register (PR). These lists do not give a correct representation of the legal protection currently afforded archaeological resources in Pennsylvania. Both registered and eligible sites are protected by federal and Commonwealth law (National Historic Preservation Act, E. O. 11593, Pennsylvania Historic Preservation Act). Procedures and criteria for the nomination and listing of sites on the National Register are contained in 36 CFR 800, 36 CFR 60 and 36 CFR 63 which should be consulted for details of the mechanics of NR listing (see Appendix A). Federal and Commonwealth laws (eg. NHPA Section 106, AHPA, PHPA) further specify the consideration and protection to be given sites before their evaluation for the National Register or Pennsylvania Register. Thus, NR and PR listing is only one means to protect sites threatened by construction or alteration of the landscape.

Recent nomination efforts may add several sites to the lists. Those nominations still under consideration are listed and marked (?).

The lists below contain only prehistoric sites. Historic archaeological sites are listed with historic structures in the NR and PR. This is not to deny the importance of these sites to history or archaeology: The following lists give a picture of the registration of sites of solely archaeological significance.

The Bureau for Historic Preservation at the State Museum should be consulted for information on the sites listed below and on procedures for the nomination of sites to the National Register.

D.2. Prehistoric Sites on the National Register of Historic Places:

County	Site Name & Number	Location
Adams	Carbaugh Run Rhyolite Quarry(?) Site 36 Ad 30	Caledonia Park
Bedford	Bedford Village Archaeological Site Site 36 Bd 90	Bedford
Centre	Fisher Farm Site Site 36 Ce 35	Unionville
Centre	Milesburg Site (?) Site 36 Ce 30	Milesburg

Centre	Tudek Site Site 36 Ce 238	State College
Clinton	Memorial Park Site Site 36 Cn 164	Lock Haven
Dauphin	Clemson Island Prehistoric District	
Dauphin	Shoop Site (?) Site 36 Da 20	Wayne/Jackson Twps.
Fayette	Francis Farm Petroglyph Site Site 36 Fa 35	
Fayette	Locus 7 Site Site 36 Fa 232	near Fayette City
Greene	Sugar Grove Petroglyph Site (?) Site 36 Gr 5	Sugar Grove
Greene	Fisher Site Site 36 Gr 21	West Finley
Greene	Foley Archaeological Site Site 36 Gr 52	
Huntingdon	Corbin Bridge Site (?) Site 36 Hu 50	3 mi. south of Huntingdon
Juniata	Book Archaeological Site (?) Site 36 Ju 1	Southwest of Academia
Lancaster	Roberts Farm Site (?) Site 36 La 1	North of Safe Harbor
Lancaster	Shenk's Ferry Site Site 36 La 2	Washington Borough
Lancaster	Washington Borough Prehistoric Site Complex Site 36 La 4, 8, 12, 54, 91.	Washington Borough
Lancaster	Frey-Haverstick Site (?) Site 36 La 6	Washington Borough
Lancaster	Shultz-Funk Site Site 36 La 7, 9	South of Washington Borough
Lancaster	Bare Island Prehistoric Site Site 36 La 56	Near Holtwood
Lancaster	Murray Site Site 36 La 183	1½ mi. south of Washington Borough

Lancaster	Big and Little Rock Petroglyphs Site 36 La 184, 185	Near Safe Harbor
Lehigh	Vera Cruz Jasper Quarry Site 35 Lh 12	Near Vera Cruz
Lycoming	Canfield Island Site Site 36 Ly 37	Lymehurst
Venango	Indian God Rock Petroglyphs Site 36 Ve 26	
Washington	Meadowcroft Rockshelter Site 36 Wh 297	Near Jefferson
Westmoreland	Squirrel Hill Site Site 36 Wm 35	West of New Florence

D.3. Prehistoric Sites on the Pennsylvania Inventory

County	Site Name & Number	Location
Adams	Carbaugh Run Rhyolite Quarry Site 36 Ad 30	Caledonia Park
Allegheny	Liggetts #1 Site Site 36 Al 9	Riverhill, Monongahela
Allegheny	Schwirian Site Site 36 Al 11	Elizabeth
Allegheny	Blaw Knox Site Site 36 Al 19	O'Hara Township
Allegheny	Old Fort Field (Miller Farm) Site 36 Al 32	Elizabeth
Allegheny	Guffy Site Site 36 Al 33	Elizabeth R.D. #3
Allegheny	Manown Site Site 36 Al 18	Monongahela R.D. #2
Armstrong	Croyle Farm #2 Site Site 36 Ar 162	Plum Creek
Armstrong	Mrs. Kimmel Site Site 36 Ar 126	Shelocta R.D. #3
Beaver	Merrill-Lock #6 Site Site 36 Bv 9	Vanport/Midland

Bedford	36 Bd 90	Bedford
Bradford	Tioga Point Farm District Site 36 Br 3, 41, 48, 49, 52, 61	Athens
Centre	Fisher Farm Site Site 36 Ce 35	College Township
Centre	Milesburg Site Site 36 Ce 38	Milesburg
Centre	Houserville Site Site 36 Ce 65	College Township
Centre	Houserville Quarry Site Site 36 Ce 64	College Township
Centre	Derry Site Site 36 Ce 228	Oak Hill
Centre	Tudek Site Site 36 Ce 238	State College
Clinton	Memorial Park Site Site 36 Cn 164	Lock Haven
Dauphin	Shoop Site Site 36 Da 20	Wayne/Jackson Twps.
Fayette	Locus 7 Site Site 36 Fa 232	Fayette City
Fayette	Francis Farm Petroglyphs Site 36 Fa 35	Perryopolis
Fayette	Sutor Site Site 36 Fa 42	Dawson R.D. #1
Fayette	Lynn Site Site 36 Fa 46	Belle Vernon
Fayette	Deffenbaugh Site Site 36 Fa 57	Old France R.D. #3
Huntingdon	Corbin Bridge Site Site 36 Hu 50	Huntingdon
Juniata	Book Site Site 36 Ju 1	Southwest of Academia
Lancaster	Big & Little Indian Petroglyphs Site 36 La 184, 185	Near Safe Harbor
Lancaster	Shenks Ferry Site	Washington Borough

	Site 36 La 2	
Lancaster	Frey-Haverstick Site Site 36 La 6	Washington Borough
Lancaster	Bare Island Prehistoric District Site 36 La 51, 56, 57	Holtwood
Lehigh	Keck Site Site 36 Lh 4	W. Salisbury
Lehigh	Vera Cruz Site 36 Lh 12	Near Vera Cruz
Lehigh	Site 36 Lh 16	W. Salisbury
Lycoming	Canfield Island Site	Lymehurst
Washington	Meadowcroft Rockshelter Site 36 Wh 297	Near Jefferson
Westmoreland	Squirrel Hill Site Site 36 Wm 35	West of New Florence
Westmoreland	Household Site #1 Site 36 Wm 61	Port Royal
Westmoreland	Turkeytown Site Site 36 Wm 62	W. Newton
Westmoreland	Finley (Labash) Site Site 36 Wm 18	Fellsburg
Westmoreland	Fullerton (Shuglie) Site Site 36 Wm 42	Herminie
Westmoreland	Gratztown (Janitor) Site Site 36 Wm 21	Sutersville

APPENDIX E

AMATEUR AND PROFESSIONAL ARCHAEOLOGICAL ORGANIZATIONS: INSTITUTIONS WITH AFFILIATED ARCHAEOLOGISTS AND ARCHAEOLOGICAL PROGRAMS

The following list is an inventory or organizations and individuals in Pennsylvania concerned with archaeology. It is not exhaustive and is not intended as a list of PHMC-preferred or recommended consultants, but simply as a summary of resources for those needing information on archaeology.

E.1. Amateur and Professional Archaeological Organizations

E.1.1 The Society for Pennsylvania Archaeology (SPA)--The Society, a member of the Eastern States Archaeological Federation, is the organization of amateurs and professionals involved in all phases of Pennsylvania archaeology. It was founded in 1929, largely as a result of the efforts of Frances Dorrance, to coordinate the activities of collectors, amateurs, and professionals in areas of common concern. Among its activities is the publication, three times a year, of Pennsylvania Archaeologist, a journal of research on historic and prehistoric archaeology in the Commonwealth. The SPA also coordinates the activities of local chapters, cooperates with the PHMC and other organizations in the preservation of archaeological sites, conducts local archaeological projects, and holds annual meetings at various locations. Inquiries concerning membership, subscriptions, etc. may be addressed to the SPA officers listed in current issues of Pennsylvania Archaeologist.

E.1.2 The Pennsylvania Archaeological Council (PAC)--PAC was founded in 1980 as the organization of professional archaeologists working in Pennsylvania. Its activities include cooperation with the PHMC and SPA on matters of common interest, lobbying for legislation and regulation on archaeological preservation, and the monitoring of archaeological research standards in Pennsylvania. Application for membership is open to any archaeologist with a documented research interest in the Commonwealth and the necessary credentials. Information on potential threats to archaeological sites, through construction or other land use, should be conveyed to PAC through the staff of the PHMC. Membership information may be obtained through the PHMC.

E. 2 Universities, Colleges, and Museum with archaeological programs, staff, and facilities. (* institutions with major active research programs in Pennsylvania archaeology).

Bloomsburg State University
  Dept. of Anthropology/Philosophy, Bloomsburg, PA 17815
Bryn Mawr College, Dept. of Anthropology., Bryn Mawr, PA 19010
*California State University
  Anthropology Section or Center for Historic and Prehistoric
  Site Archaeology, California, PA 15419
*Carnegie Museum of Natural History
  Section of Man, 4400 Forbes Ave., Pittsburgh, PA 15213
Clarion State University
  Dept. of Sociology and Anthropology, Clarion, PA, 16214
Dickinson College
  Dept. of Sociology and Anthropology, Carlisle, PA, 17013
Edinboro State University
  Dept. of Anthropology, Edinboro, PA, 16444
*Franklin and Marshall College
  Dept. of Anthropology or North Museum, Lancaster, PA, 17604
Gannon College, Dept. of Sociology and Anthropology,
  Erie, PA, 16501
Indiana University of Pennsylvania
  Dept. of Anthropology, Indiana, PA 15705
Juniata College
  Dept. of Sociology and Anthropology, Huntingdon, PA, 16652
Kutztown State University, Dept. of Sociology and Anthropology,
  Kutztown, PA
Mansfield State University
  Dept. of Sociology and Anthropology, Mansfield, PA, 16933
Millersville State University
  Dept. of Sociology and Anthropology, Millersville, PA, 17551
*University of Pennsylvania
  Dept. of Anthropology or University Museum or Museum Institute
    for Conservation Archaeology, Philadelphia, PA 19104
*The University of Pittsburgh
  Dept. of Anthropology, Pittsburgh, PA, 15260
Shippensburg State University
  Dept. of Sociology and Anthropology, Shippensburg, PA, 17257
*The State Museum
  Box 1026, Harrisburg, PA 17120
Temple University
  Dept. of Anthropology, Philadelphia, PA, 19122
West Chester State University
  Anthropology Dept., West Chester, PA 19380
Wilkes College, Dept. of Sociology and Anthropology,
  Wilkes-Barre, PA

E.3 The Pennsylvania Historical and Museum Commission (PHMC)

The PHMC is the state agency with responsibility for the protection and preservation of historic and archaeological resources. It should be consulted concerning the effect on archaeological sites of any Commonwealth, Commonwealth-assisted, licensed, or controlled activity. The PHMC retains a list of qualified contractors for archaeological work. Correspondence should be addressed to the Bureau for Historic Preservation, PO Box 1026, Harrisburg, PA 17120.

APPENDIX F

PHMC POLICY ON THE TREATMENT OF BURIALS AND HUMAN REMAINS

F.1 The Archaeological Value of Human Remains and Burials

Human remains, both in themselves and by their disposition and association in burials and cemeteries, can provide valuable information on human evolution, social structure, nutrition and paleodemography, and ideology (Bass 1971, Brothwell 1972, Buikstra 1977, Hatch and Willey 1974, Ubelaker 1980). The careful excavation and analysis of human remains can yield information unobtainable by other means. It is, therefore, essential that archaeologists, trained in the excavation, analysis, and interpretation of skeletal remains, be permitted access to this material in a state of preservation which allows them to obtain from it all possible scientific information. The potential for important future developments in skeletal analysis necessitates the recovery of a representative sample of human remains and its preservation for future study or restudy in institutions having adequate facilities for curation. Human remains can thus be viewed as important cultural resources whose protection and preservation as unique sources of information on past lifeways is essential to archaeologists, historians, and the general public.

F.2 The Social and Religious Meaning of Human Remains

It must be recognized, at the same time, that human remains and burials have a special significance to certain groups as the remains of ancestors. Further, although they may be the remains of anonymous individuals, they are entitled to the same respect and consideration accorded to any human remains. For these reasons, burials and their contents are not to be unneccessarily disturbed, exploited, damaged, destroyed, excavated for the use of unqualified or unprincipled individuals or organizations, or in general, treated in a manner inconsistent with their status as human remains or their meaning to the descendants of those interred.

There is no apparent and necessary conflict between the interests of the archaeological community and those of the living members of ethnic groups represented in the burials encountered during archaeological excavation. Both groups are, or should be, concerned with the preservation and protection of these remains. To this end, the careful and legitimate scientific study of human remains may contribute to the general understanding of past lifeways and our common cultural heritage while treating human remains with the respect they deserve and insuring their protection from vandalism or uncontrolled exploitation.

F.3 PHMC Policy and Recommendations

Given the considerations addressed above, and recognizing the need for an approach which adequately reconciles the various interests involved, the PHMC recommends the following guidelines for the archaeological study of human remains:

1) Fortuitous finds which are not of forensic significance should be brought to the immediate attention of the BHP. No attempt at excavation should be made, and no activity which might disturb or damage the remains conducted until a qualified archaeologist and the BHP are consulted on the procedure to be followed.

2) All human skeletal material, whether a fortuitous find or that encountered during a program of archaeological investigations, should be excavated, if necessary and scientifically desirable, by standard archaeological techniques. The State Archaeologist or other qualified archaeologist (see Appendix B.1) should decide whether excavation is necessary and/or desirable, basing the decision on the presence and degree of immediate or potential threat to the remains and on their potential archaeological value. The latter consideration requires that the excavation and study of skeletal material, like any archaeological work, be related to a research design and explicit archaeological problem and not performed simply because the skeletal material exists. The decision may be that the material is best left intact in the ground for future study, after recording its location and nature.

3) Excavated material should be taken to an appropriate institution for study and curation. Collections of skeletal remains, if they are to be of continued scientific use, must be maintained and stored at institutions with adequate facilities and personnel for curation. Access by qualified researchers to these collections is an essential part of their scientific value. Such institutions include universities and museums with laboratory facilities and provisions for permanent or long-term curation. A list of qualifying institutions may be obtained from the BHP.

4) As with other archaeological specimens, skeletal material collected on Commonwealth-owned or controlled lands or during an archaeological investigation subject to PHMC review (see permit and review regulations) remains the property of the Commonwealth the PHMC having ultimate jurisdiction over its disposition. The PHMC must be consulted before study on or curation of such material.

5) Adequate study of skeletal remains should include study by a specialist in human osteology to answer specific questions of significance as developed in a research design.

6) Museum displays of skeletal material illustrating aspects of human evolution, physiology, social behavior and customs serve an important educational purpose of relevance to the general public. However, in accord with the policy of the American Association of Museum, skeletal remains should not be displayed solely for the purpose of satisfying public curiosity.

7) The PHMC cannot condone reburial of skeletal or other remains with ceremony which would not be in accord with the beliefs of the ethnic group represented by those remains.

8) Incidences of non-compliance with the provisions of this policy should be brought to the attention of the BHP. The Pennsylvania Archaeological Council should be notified of cases of professional non-compliance in violation of its code of ethics and professional standards.

APPENDIX G

STANDARDS FOR THE CURATION OF COLLECTIONS

G.1 Introduction -- The Need for Curation Standards

As the bulk of archaeological collections grows, due in large part to the addition of specimens collected during contract archaeological work, the adequate curation of collections has become a major problem. The problem is national in scope (U.S. Dept. of the Interior 1980b) and a satisfactory solution will depend on cooperation above the state level. Federal legislation provides for some consideration of curation in federally-related projects, but although overall coordination and the maintenance of minimum standards is a national concern, states must take the initiative in insuring adequate curation of collections resulting from state or federally-related projects. The minimal elements of any program of curation may be defined as follows (McGimsey and Davis 1977):

1) the systematic retention of research collections or representative samples of these collections,
2) a systematic storage and record-keeping system,
3) ready access by curators and researchers to collections,
4) conservation facilities,
5) adequate safety and security measures, and
6) appropriate storage space.

Federal legislation regulates the disposition and care of collections from federally-related projects. The Antiquities Act of 1906 provides for the permanent collection and preservation by designated universities and museums for "national collections" recovered under permit from federal lands. Protection and provision for curation was extended to artifacts collected during salvage operations by the Reservoir Salvage Act of 1960 and to artifacts collected during any such federally - assisted or controlled project by the AHPA of 1974.

Regulations specifying the facilities, personnel, and actions necessary for adequate curation have been adopted by several agencies: The National Park Service (36 CFR 66: redesignated 36 CFR 307); and the Soil Conservation Service (7 CFR 656). In addition, many agencies have adopted unpublished guidelines and procedures concerning the curation of collections resulting from projects under their control.

The Pennsylvania Historic Preservation Act of 1978 specifies (Section 9 a, d) that archaeological specimens and information collected during archaeological field investigations on sites owned or controlled by the Commonwealth, in order to be protected and preserved, "remain the property of the Commonwealth and shall be utilized for scientific and public educational purposes". Permits for archaeological investigations are issued by the PHMC only on the condition that all specimens collected during permitted activities "shall be the exclusive property of the Commonwealth, which through the commission shall make appropriate arrangements for their appreciation and study". Thus the PHMC is given by law the explicit right to a first and/or final decision on the disposition of collections from such projects.

The facilities of the State Museum are clearly insufficient to accomodate all the archaeological material collected under the provisions of the Historic Preservation Act. Arrangements for the storage and curation of collections are usually made by consultation with the PHMC, which requires that they conform to the minimal standards listed above. Such alternative arrangements should be considered before the collection of specimens: in the proposal or permit application submitted by a contractor for PHMC review (see regulations, Appendix H). This is a requirement for PHMC approval of proposals and permit applications: no Commonwealth regulated archaeological investigations will be permitted unless adequate provisions are made for the curation of the anticipated collections.

G.2 Features of an Adequate Curation Program and Facility

A number of institutions in Pennsylvania have facilities for the storage and curation of archaeological collections. The PHMC may be able to suggest appropriate arrangements if consulted during the planning stage of a project. In determining the adequacy of curation facilities, the following features are considered important, although any one institution may not possess all the suggested features of an ideal curatorial institution:

G.2.1 Personnel

a) Supervisory Staff: Director, Curators, Senior Research Archaeologists.
b) Research and Curatorial Staff: Research Archaeologists, Laboratory and Curatorial Supervisors and Assistants, Technical Specialists.
c) Support Staff: Administrative Assistant, Accountant, Conservator, Photographer, Draftsman, Editor, Secretarial/Clerical Personnel.

G.2.2. Facilities

a) Secure housing, with provisions made for limiting access and preventing forced entry.
b) Fire prevention and control features; smoke and gas sensors; a variety of fire extinguishers, sprinkler systems.
c) Atmosphere and temperature control; adequate lighting (sufficient lighting for research and conservation areas, reduced lighting for storage areas).
d) An arrangement which places storage, work, and laboratory space in close proximity.
e) Adequate administrative office equipment: typewriters, files desks, etc.
f) Adequate laboratory/work equipment: tables, shelves and cabinets, specialized conservation equipment, drafting and photographic equipment, microscopes, weighing and measuring devices, calculators and typewriters, labelling equipment, etc.

g) Protected storage for specimens and records: sturdy shelving and containers, protection from deterioration due to moisture and pollutants.
h) Sufficient size to allow for expansion.

G.2.3. Policies and Procedures (cf., Curator 23(1), 1980)

a) Procedures for accessioning and deaccessioning collections are essential. A realistic decision must be made as to which materials can be accomodated with the available facilities. Further, clear policies and procedures are necessary to permit the transfer of materials to other institutions in a way that insures their continued care.
b) Policies must clearly establish the procedures for ready access to collections by qualified investigators with legitimate research interests.
c) Storage and access procedures should reflect the differences in frequency of use for various collections. Ford (1980: 55-57) suggests a tripartite classification of collections reflecting their nature and use: Class 1 collections include reference collections that are regularly consulted and are essential for research, unique specimens or specimens from unique site, and artifacts from sites currently under investigation which must be easily be located. Class 2 collections are those not frequently consulted by sufficiently in demand for exhibit or research that they should be stored so as to minimize there retrieval time. Class 3 includes material seldom consulted such as bulk collections held primarily for future re-examination. Class 1 storage will be the most elaborate and expensive, with provision for the protection of delicate or perishable specimens. Class 2 storage, which may include exhibits, is not normally accessible to the public but should be planned to minimize retrieval time. Class 3 storage must accomodate bulky and heavy items and assemblages.

d) A central catalogue of all material in the possession of an institution is essential. Uncatalogued or inadequately labelled specimens are scientifically useless. The cataloguing and labelling system should conform to that of the PHMC (see Appendix H).

This or a similar system should establish priorities for storage and access which allow curating institutions to efficiently handle the flow of material in an out of storage.

G.3 Summary

It is the responsibility of all archaeologists conducting investigations subject to the review of the PHMC to make adequate provisions for the curation of collections. PHMC approval will not be given to proposals or permit applications which do not consider the preservation, study, and documentation of the collections which will result from proposed field investigations. Guidance in developing adequate curation plans may be obtained from the PHMC and by reference to the literature on museum collections management (see, for example, references in *Curator*, *Museum* and *Museums Journal*).

G.4 PHMC Policy on Access to Collections.

The collections of the PHMC at the State Museum are available to researchers with legitimate scholarly interests in archaeology subject to the following restrictions:

1) All publications, reports, and presentations referring to material from the collections shall cite the PHMC and the Museum as the source of information.
2) Any photographic or other visual reproduction of specimens will be done only after permission has been obtained from the PHMC.
3) No Specimens shall be removed from the Museum for any purpose without the permission of the PHMC.
4) Any object deaccessioned or borrowed from the Museum's collections remains the property of the PHMC and the Commonwealth.
5) Access to the collections may be granted to qualified users upon written request, subject to staff availability, and only with staff supervision.
6) Failure to comply with these policies will result in the permission for use being revoked.

APPENDIX H

PROCEDURES FOR COMPLIANCE WITH FEDERAL AND COMMONWEALTH PRESERVATION LAW

H.1. Introduction

Projects affecting or potentially affecting archaeological properties are subject to review by the PHMC under the provisions of both Section 106 of the National Historic Preservation Act of 1966 and Section 10 of the 1978 Pennsylvania Historic Preservation Act (see Appendix A for the provisions of these acts). As the State Historic Preservation Office, the PHMC monitors activities funded, assisted, or licensed by both the federal government and the Commonwealth and their agencies or subdivisions. The procedures for compliance with Federal and Commonwealth law are listed in Section H.2.

The PHMC also has the authority, under the terms of the PHPA, to issue permits for archaeological investigations performed on Commonwealth land. Any individual or institution proposing to conduct archaeological investigation on land owned or controlled by the Commonwealth may do so only after the submission to the PHMC (Bureau for Historic Preservation) of a permit application and the approval by the PHMC of the request and issuance of a permit. Procedures and requirements for permit applicants are contained in Section H.3.

The procedures for compliance with Section 106 are standard throughout most states. The procedures outlined below are designed to provide guidance for compliance by agencies and contractors with the NHPA and PHPA. They set minimum standards acceptable to the PHMC for the consideration and protection of archaeological properties. Commonwealth or federal agencies and their contractors or licensees should familiarize themselves with these procedures before planning or beginning a project or activity which may effect archaeological properties. It cannot be emphasized enough that early consideration of compliance requirements and planning based on the incorporation of these procedures into a proposed project will reduce the time and expense involved in compliance for both project planners and administrators and the Commission. The development of standard procedures benefits all parties involved. An essential step in this process is consultation with the staff of the BHP as early as possible before the start of a project with a potential adverse effect on archaeological resources.

H.2. Procedures for Compliance with Federal and Commonwealth Regulations

H.2.1. Introduction

State and federal laws require all agencies to consider the effects of their projects on all historic and prehistoric sites and objects determined eligible for inclusion in the National Register of Historic Places. In Pennsylvania it is the responsibility of the Bureau for Historic Preservation (BHP) to review all state and federal undertakings to determine their effect upon significant sites and objects as well as to oversee state and federal agency compliance with preservation statutes. A description of the archaeological portion of the review process and requirements associated with compliance follows.

H.2.2 Review Process

The first step in the review process is an examination of all projects by the Bureau for Historic Preservation to determine if any portion of a proposed state or federal project occurs on or near a previously recorded, potentially significant, historic or prehistoric archaeological site. To assist the Bureau for Historic Preservation in the review of a project, the Federal or State Agency is asked to submit a 7.5' U.S.G.S. map (or copy thereof) locating the project along with a description of the proposed work. Additionally, the review seeks to determine if the project occurs in an area with potential for significant archaeological sites which has not been adequately surveyed.

Records of archaeological sites are maintained and continuously augmented by the BHP. Site locations are recorded in the Pennsylvania Archaeological Site Survey (P.A.S.S.) and on appropriate U.S.G.S. 7.5' minute series quad maps. At present the files contain data on the locations of over 10,000 sites. Similar files regarding historic structures are also maintained by the BHP. Comparison of project locations (sumbitted on 7.5' minute U.S.G.S. maps) with these site records enable the BHP to determine the impact of a project on a known site.

Projects occurring in areas where no prior survey data or sites are recorded often require historical and archaeological research if there is a high potential that significant sites or objects exist there. Areas where previous activities have destroyed all potential site locations or where sufficient archaeological site survey has been conducted require no further action.

H.2.3. Review Response

After examining a proposed project, the site files, and areas of potential site occurrence, the BHP will issue one of the following responses regarding the entire project area or specifically delineated portions of it:

1. The project will not affect any known or recorded archaeological site(s), but it is in an area where insufficient previous survey has been conducted and where there is a high probability that significant sites occur.

2. The project will affect recorded archaeological sites with potential or known significance and others are likely to occur.

3. The project will have no effect on archaeological resources.

H.2.4. Required Action

When the BHP has determined that a project will have no effect on archaeological resources, no further historical and archaeological research is necessary. Otherwise, the purpose and type of appropriate archaeological survey and/or mitigation depend upon the occurrence or potential occurrence of sites in the project area and/or how much is already known about the nature of such sites. A brief description of each phase of work follows.

H.2.4.1 Phase I Survey

When the review process determines that a project will not affect any known or recorded site(s), but it is in an area where insufficient previous survey has been conducted and where there is a high probability that significant sites occur, a Phase I archaeological survey must be conducted. The purpose of this survey is to identify the location of all surface and/or stratified sites which occur in the project area. Site locations are frequently discovered as a result of documentary research, informant interviews, land surface inspection, and subsurface testing.

H.2.4.2 Phase II Survey

When the review process or a Phase I survey indicates that a site does exist in a project area, but its significance is unknown, a Phase II archaeological survey must be undertaken. The purpose of such a survey is twofold: (1) to determine in consultation with the BHP the significance (National Register eligibility) of a known site and (2) to determine the boundaries of the subject site.

Potentially significant archaeological sites are evaluated against National Register criteria and must demonstrate that they "have yielded, or may be likely to yield, information important in prehistory or history" (36 CFR 60.6). In cases where the agency involved and the Bureau for Historic Preservation fail to agree on the significance of a property, the National Park Service will be asked to provide a final determination of eligibility.

Phase II investigations include more intensive documentary and/or field research than that performed during Phase I survey. Because the nature of these investigations may vary according to the distinctive character of each site, specific procedures for their implementation must be developed in consultation with the BHP.

H.2.4.3 Phase III (Mitigation)

After receiving and reviewing all Phase I and Phase II reports, the project agency in consultation with the BHP and the Advisory Council will develop a plan to mitigate any adverse effects on significant sites located within the project area. An acceptable mitigation plan might involve shifting the location of the project or its adverse effects away from the site(s) or, alternatively, designing appropriate archaeological investigations to recover significant data which the site(s) contains.

The development and execution of a satisfactory mitigation plan concludes the project agency's preservation activities, thereby enabling the project to proceed.

H.2.5 Guidelines

Guidelines for the three phases of archaeological investigations have been developed in order to ensure some degree of uniformity in the approach taken by project activities towards the fulfillment of their preservation obligations. It is likewise expected that published guidelines will result in more acceptable, efficient, cost-effective research on Pennsylvania archaeological sites. Innovation beyond the scope of these recommended procedures is invited and encouraged if discussed in advance with the BHP.

Due to the complexities often characterizing projects and sites located in urban settings, these guidelines apply only to projects situated in nonurban environments. Archaeological surveys required in urban areas should be designed and implemented in consultation with the BHP.

H.2.5.1. Phase I Survey

Minimum procedures for Phase I survey include:

1. SITE VISIT to determine the possibility of prior destruction and the visual evidence for a potential site. If initial field check shows that the site has been previously destroyed, or for other obvious reasons no site exists there, the BHP should be consulted, and it may be determined that no further Phase I survey is required. The basis for such conclusions must be submitted in writing.

2. INFORMANT INTERVIEWS with persons who may be familiar with the project area and possible archaeological site(s). If interviews show that a site exists and its approximate boundaries can be determined, then no further Phase I survey work may be required at that location.

3. LITERATURE SEARCH includes preliminary review of manuscripts, maps, historical documents, unpublished notes, prior surveys, and published material relative to the project area to determine possible site presence. If presence of a site can be established through the literature search and it is shown through visual inspection or other means that the site is still intact, no further Phase I survey work is required in that portion of the project area.

4. FIELD TESTING in the project area to: verify site locations gleaned from informants, if necessary; to determine the presence of site locations suggested by the literature search; and discover previously unknown sites. Because portions of project areas may be considered unlikely to contain sites, contracted archaeologists

encountered or anticipating such areas should devise survey strategies for the same in consultation with the BHP. Areas characterized by more than 15% slope may fall into this category and should be treated accordingly.

5. SUBMISSION OF PHASE I PROJECT REPORT in accordance with requirements specified in the Pennsylvania Archaeological Preservation Plan (Section B.2.1).

6. SUBMISSION OF PHASE I SURVEY SUMMARY QUESTIONNAIRE for each identified site. Response to question 1 of the questionnaire (see Section H.2.6 is mandatory. Questions 2-9 should be answered if possible.

H.2.5.1.1. Minimum Field Testing Procedures

These include:

a. Systematic controlled surface collection when adequate surface visibility exists.

OR, ALTERNATIVELY

Minimum excavation of 50 cm^2 test units (to undisturbed or non-artifact bearing sub soil) and screening through ¼" hardware cloth of excavated soils at 15m intervals (or 2 per $460m^2$ surface area). When cultural materials are discovered in isolated test units, additional units should be dug in the locus of discovery or initial test units should be expanded to ensure against the phenomenon of "stray finds".

IN ALL CASES

b. Minimum excavation of test units equivalent to 1 m^2 (or appropriately larger) surface area in each potentially stratified separate location in the project area to a depth of sterile soil or, alternatively, to a maximum depth of proposed project impact. test units should be excavated at 30 m intervals within potentially stratified areas, and excavated soils should be screened through ¼" hardware cloth by level. Such testing should be discontinued as soon as archaeological evidence of stratigraphy is demonstrated.

H.2.5.2 Phase II Survey

For reasons previously mentioned (see Section H.2.4), specific procedures for Phase II archaeological survey must be developed and reviewed in consultation with the BHP before implementation. Phase II archaeological reports should adhere to the guidelines set forth in Appendix B and emphasize arguments for or against significance of potentially eligible sites. Additionally, a Phase II Survey Summary Questionnaire (see Section H.2.7) must be completed in full and submitted to the BHP.

When required, a Determination of Eligibility Report for selected sites will be prepared by the archaeological contractor for submission to the project agency and the BHP. A Determination of Effect Report and/or Preliminary Case Report may be required as well. Each of the above-referenced reports must minimally meet special requirements established for the same in Section 106 of the National Historic Preservation Act and implementing regulation 36 CFR Part 800.13.

H.2.5.3 Phase III (Mitigation)

Due to the project-specific nature of this phase, plans to mitigate adverse effects on significant archaeological sites will be developed on a case-by-case basis in consultation with the BHP and the Advisory Council. Phase III (Mitigation) reports must minimally follow guidelines set forth in Appendix B and emphasize the contribution made to our knowledge of human behavior and/or culture history when data recovery has occurred. It is also incumbent upon each archaeological contractor completing data recovery under mitigation to share his/her findings with the public via community meetings, lectures, popular articles and the like, providing the client has no valid objection to such public disclosure.

H.2.5.4 Disposition of Artifacts

Provisions for the responsible curation of artifacts recovered as a result of contract archaeology in Pennsylvania should be made in consultation with the BHP early in the survey process. The Pennsylvania Historical and Musuem Commission maintains the right of first refusal for all collections resulting from state and/or federally assisted projects. Should the State Museum not accept the collections, recommendations will be made with regard to other responsible repositories or disposal, if appropriate.

All artifacts to be deposited with the PHMC should be washed, inventoried and catalogued, as required, by the contracting archaeologist. The marking system to be employed is that used by the William Penn Memorial Musuem. For example:

$$\frac{\text{Site Number}}{\text{Excavation Unit}} = \frac{\text{36Fr107}}{145}$$

Site numbers are assigned by the PHMC once Pennsylvania Archaeological Site Survey forms have been completed for each site. Arbitrary numbers are customarily assigned to excavation units by the archaeological contractor. (The subscript 1, i.e., $\frac{\text{site number}}{1}$ should be retained for all general surface or otherwise unprovenienced materials recovered from a site).

H.2.6 Phase I Survey Summary Questionnaire (Specimen)

Directions: Complete one questionnaire for each site. Answer to question 1 must be provided. If possible address questions 2-9 as well. Attach additional sheets for comments as necessary.

	Yes	No	Uncertain
1. Is the site stratified? Comments:	___	___	___
2. Is the site multi-component? Comments:	___	___	___
3. Does the site include horizontally separate clusters of single component remains? Comments:	___	___	___
4. Does the site contain known subsurface features, e.g., postmolds, pits, burials, hearths, etc.? Comments:	___	___	___
5. If the answer to #4 above is no, is the site likely, based upon your evidence and previous experience with such sites, to contain features of any sort (please comment)? Comments:	___	___	___
6. Does the site contain historic (Euro-American) components? Comments (specify components by general type of features and probable century, e.g., 18th century mill foundations and raceway).	___	___	___
7. Is the site likely to contain any archaeological remains which, in your opinion, would yield significant new data in prehistory or history through additional archaeological investigations? Comments:	___	___	___

8. If you answer to question #7 was yes, how would you recover and analyze the remains (specify the kinds of things anticipated) at this site in order to prove or demonstrate their significance as new data in the understanding of human behavior and/or culture history?

9. Is there enough of the site intact and within the project area to enable more extensive archaeological investigations to generate probable and positive answers to question #8?

H.2.7. Phase II Survey Summary Questionnaire (Specimen)

Directions: Complete one questionnaire for each site: answer all questions. Attach additional sheets for comments as necessary.

Yes No

Uncertain

1. Is the site multi-component? ___ ___ ___
   Comments:

2. Does the site include horizontally separate clusters of single component remains? ___ ___ ___
   Comments:

3. Does the site contain known subsurface features, e.g., postmolds, pits, burials, hearths, etc.? ___ ___ ___
   Comments:

4. If the answer to #3 above is no, is the site likely, based upon your evidence and previous experience with such sites, to contain features of any sort (please comment)? ___ ___ ___
   Comments:

5. Does the site contain historic (Euro-American) components? Comments (specify components by general type of features and probable century, e.g., 18th century mill foundations and raceway). ___ ___ ___

6. Is the site likely to contain any archaeological remains which, in your opinion, would yield significant new data in prehistory or history through additional archaeological investigations? ___ ___ ___
   Comments:

7. If your answer to question #6 was yes, how would you recover and analyze the remains (specify the kinds of things anticipated) at this site in order to prove or demonstrate their significance as new data in the understanding of human behavior and/or culture history?

8. Is there enough of the site intact and within the project area to enable more extensive archaeological investigations to generate probable and positive answers to question #7?

H.2.8. Exceptions

Certain types of Commonwealth and federal projects are exempt from these provisions: 1) projects conducted under emergency conditions in order to prevent an immediate or imminent threat to life or property; 2) Commonwealth projects declared exempt after the approval by the PHMC of a petition by the Commonwealth agency or its agent. Such a petition must be made to the PHMC by the responsible officer of an agency in the following form:

a) a written request accompanied by the following documentation:

b) a complete description of the nature of all activities that would be implemented in the particular category of undertaking, and

c) an explanation of why such activities in that category will not affect archaeological resources.

After the PHMC has received a petition and sufficient supporting documentation (further documentation may be required by the PHMC), it will decide whether or not such a category of Commonwealth-assisted or licensed activity shall be exempt and respond to the agency with a written explanation of its decision within 60 days. The PHMC will maintain a list of such exempt categories of undertaking available to agencies upon request.

H.3. Pennsylvania Historical and Museum Commission Archaeological Permitting Procedure

H.3.1. Introduction

The Pennsylvania Historical and Museum Commission is given specific responsibility to carry out the preservation, protection and proper investigation of archaeological sites on lands of the Commonwealth. As part of this responsibility, the Commission may issue permits for archaeological field investigations subject to restraints and conditions that will protect and preserve the specimens and information from such field work. The basic requirement for such field investigations is a valid scientific purpose based on an academic or professional quality proposal describing the proposed undertaking. A written report must result from the field investigation which should include an abstract, a discussion of the purpose and goals of the investigation, methodology and techniques employed and conclusions relating to broader research topics in anthropology and archaeology. It should also include relevant maps, drawings and photographs.

Any artifacts discovered during the course of permitted field investigations remain the property of the Commonwealth. Special arrangements can be made for the curation and storage of archaeological specimens by a written agreement with the Commission.

These regulations are intended to protect the public's interest in archaeological sites and specimens on lands owned or controlled by the Commonwealth and to carry out the Commonwealth's role as a trustee of the historic environment. The regulations recognize that archaeological sites are unique, non-renewable and fragile resources. Minimal levels of information for archaeological field investigations are established to insure that the Commonwealth's archaeological heritage is used for the educational benefit of all citizens of Pennsylvania.

Non-compliance with the terms of the permit may cause the Commission to revoke the permit. Unauthorized field investigation or the destruction of archaeological sites or specimens are subject to criminal penalties.

H.3.2. Permitting Procedure

H.3.2.1 Authority and Eligibility

The Historic Preservation Act gives the Pennsylvania Historical and Museum Commission the authority to issue permits for archaeological field investigations on Commonwealth land subject to the condition that the findings be reported and disseminated and that the resulting collections remain the property of the Commission. Any person or institutions with a valid scientific purpose may apply for a permit to conduct archaeological investigations on Commonwealth-owned or controlled land. A valid scientific purpose is established by the submission to the Commission of an adequate proposal, as described below. The proposal will be reviewed by the Commission and a decision made as to its adequacy within that specified time limit. The final decision on the issuance of a permit rests with the Commission.

H.3.2.2. Permit Application Form

The application for a permit should take the following form:

a. a cover letter describing briefly the proposed field investigations, the anticipated beginning and closing dates; the personnel involved, and the sources of financial support;

b. a proposal (described below) outlining the scope of the undertaking; and

c. the curriculum vitae of the principal investigator and a list of the supervisory personnel and their qualifications.

d. Application for a permit should be made by writing: Pennsylvania Historical and Museum Commission, P.O. Box 1026, Harrisburg, Pennsylvania 17120.

H.3.2.2.1.

The proposal should be of academic or professional quality and should contain the following:

a. an abstract (1-2 paragraphs) summarizing the proposed investigations.

b. a Table of Contents

c. a section or sections establishing the purpose, goals, and methodology of the proposed investigations with a review and evaluation of relevant previous research. A summary of the significance of the proposed investigations for broad research interests in anthropology or archaeology should be included.

d. a detailed account of the methods and techniques to be employed, including: the area involved, map location (USGS 7.5' and detailed sketch map), photographs of the area, the excavation units and recording system, special techniques appropriate to the investigation (flotation, use of heavy machinery for topsoil removal, infrared photography, etc.), and laboratory techniques to be used in the study of archaeological specimens recovered during investigation.

e. a budget and timetable for the proposed investigation, including sources of financial support and amounts by category and an estimated closing date for the field and laboratory investigations.

f. bibliographic references.

H.3.2.2.2

The curriculum vitae of the principal investigator should establish his/her qualifications to conduct archaeological field investigations. Minimum qualifications are:

a. possession of a Master's degree or doctorate in anthropology, archaeology, or closely related field.

b. demonstration of the ability to complete research, as indicated by timely completion of research reports, thesis, or dissertation.

c. two years field and/or laboratory experience in archaeology, including six months in a supervisory capacity and six weeks' training in a recognized archaeological field school.

d. one year's experience in North American archaeology.

H.3.2.3. Application Review

The application materials specified above must be submitted to the Commission for review. The Commission will review the application and respond by letter to the applicant within sixty days of receipt of the completed application. If further information or revisions of the proposal are required, the Commission will respond within sixty days of receipt of the revised application. The response by the Commission may be either:

a. acceptance of the permit application;

b. a request for further information or supporting documentation, or suggested revisions to the proposal or other portion of the application; or

c. denial of the application. If the permit is denied, the Commission must specify, in its written response, why the application was denied.

H.3.2.4 Issuance of a permit

If the application is approved, a letter indicating the Commission's approval will be sent to the applicant within thirty days of the decision and constitutes a permit to conduct the investigations described in the application. The permit is issued subject to the following conditions and restraints:

H.3.2.4.1.

A report on the findings and conclusions resulting from the investigations must be submitted to the Commission within six months of the closing date (as given in the permit) of the investigations. A request for an extension of this deadline may be made in writing to the Commission, specifying: (a) the reasons for requesting an extension, (b) the time period of the extension requested (up to six months), and (c) evidence of work completed and details of additional work to be completed.

H.3.2.4.2

The report must include the following:

a. an abstract (1-2 paragraphs) summarizing the investigations, their results, and their significance.

b. a Table of Contents.

c. an introductory section or sections summarizing the purpose, goals, and methods of the investigation and discussion its significance for general anthropological and archaeological research topics.

d. a description of the methods and techniques employed to address the research problems of the investigation. These should include: the area of the excavations and their location on USGS 7.5' maps and more detailed maps of the locality, the units of excavation, and recording system, special techniques employed, techniques of archaeological specimen recovery and preservation, photographs and drawings of plan and selections.

e. an inventory and description of the data recovered.

H.3.2.4.3

The permit holder must present evidence to the Commission of an effort to disseminate information on the results of the investigations conducted under permit to the general public.

This requirement cannot be satisfied by the dissemination of research results to the professional archaeological community in scholarly journals or by presentations to professional society meetings.

H.3.2.5. Prohibited Acts

No person on lands owned or controlled by the Commonwealth may:

a. conduct field investigations without first obtaining a permit from the Commission,

b. or appropriate, deface, destroy, or otherwise alter any archaeological site or specimens except under the authority of a permit granted by the Commission.

H.3.2.6. Non-compliance with the Terms of the Permit

In the event of the failure by the permit holder to comply with the conditions of the permit specified in Section 3 above, the Commission may, at its descretion, revoke the permit permanently or until such time as the deficiencies in compliance are corrected by the permit holder. Revocation of the permit shall be effective immediately upon receipt by the permit holder of a letter from the Commission. The Commission shall, within ten days of the issuance of a letter of revocation, provide the permit holder with a written explanation of the reasons for revocation, specifying violations of the permit conditions and procedures for remedying those violations.

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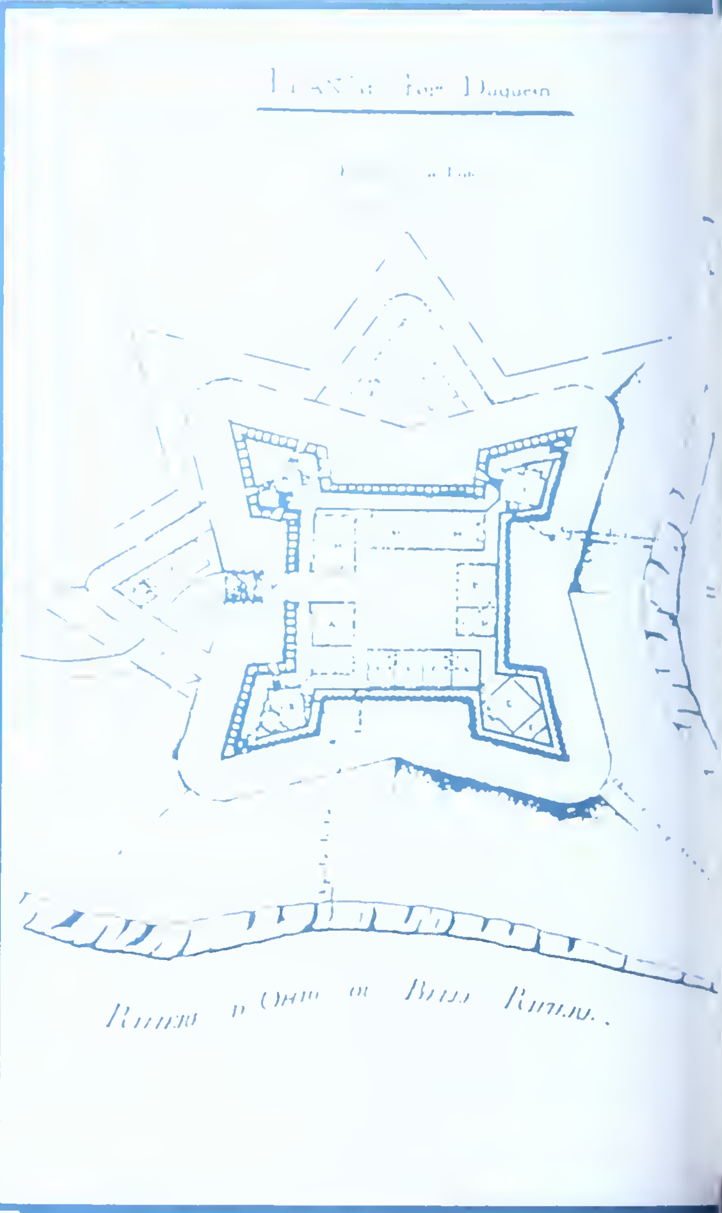
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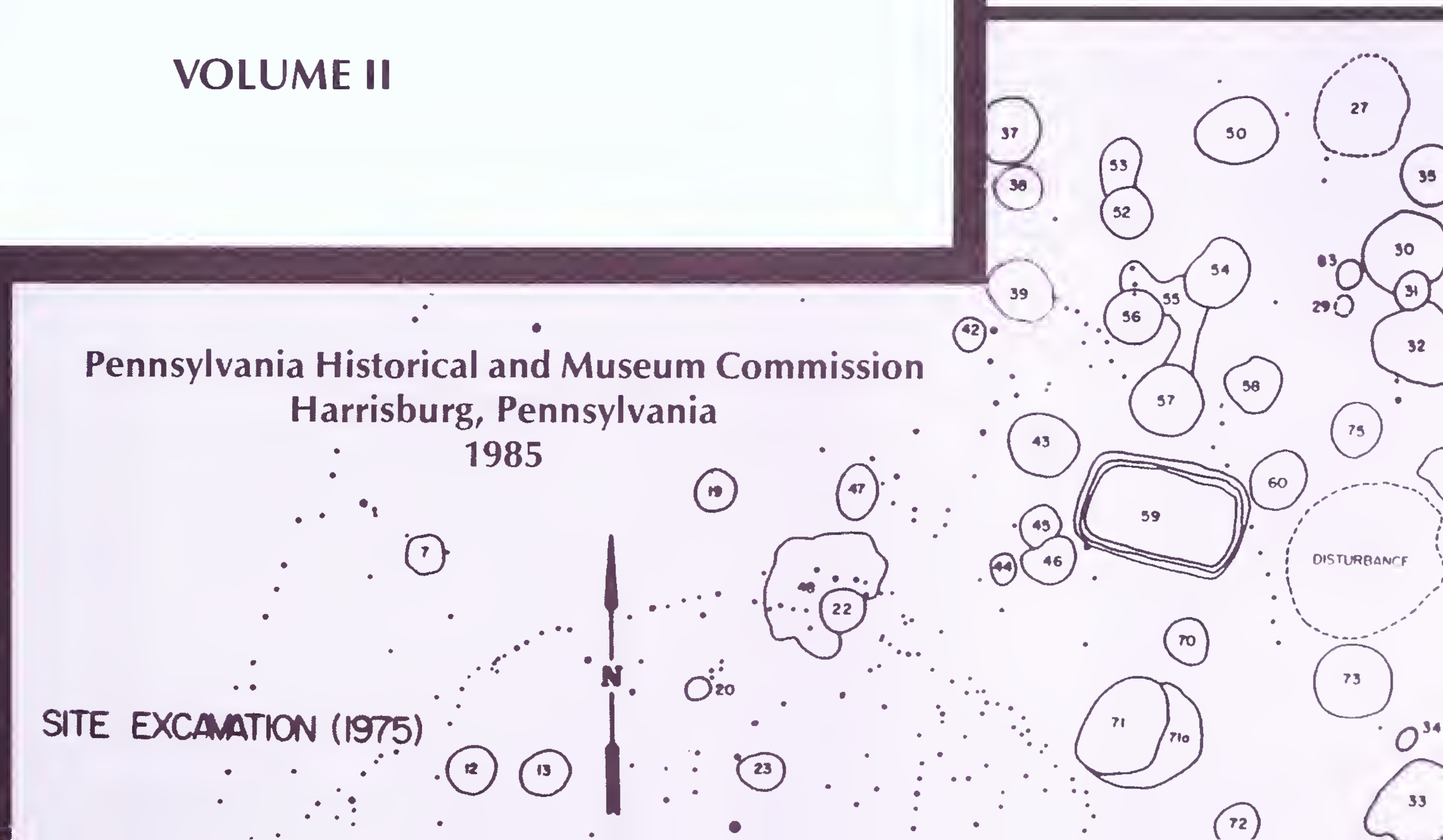

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PREFACE

This second volume of the Pennsylvania archaeological resources protection plan contains a summary of current archaeological knowledge in the state. The summary is selective rather than comprehensive since the goal is to facilitate the resource conservation efforts of the PHMC and others in the archaeological community. A necessary first step in the conservation or protection of archaeological resources is an inventory of the available information, the identification of gaps in our current knowledge, and the definition of important research questions and requirements. Planning the conservation of resources can then proceed on the basis of the research needs thus defined.

To aid in summarizing archaeological information, Pennsylvania has been divided into several major physiographic regions. Archaeologists familiar with each region have been asked to discuss the state of archaeological knowledge, the major research questions or themes, and the research needs for their region. The results are presented in Chapters 3 - 5. These regional summaries are prefaced by a general synopsis of Pennsylvania culture history and environmental patterns (Chapter 2) to provide some basis for comparison.

Although contributors were asked to conform to a standard format in their presentations to encourage comparability, this has not always been possible. Different histories, conditions, and emphases in research in each region have resulted in differing approaches in the summaries of Chapters 3 - 5. Subsequent revisions of the plan should consider the validity and merit of the various approaches.

Comments on the content or purpose of this volume is welcomed and should be addressed to the Bureau for Historic Preservation, PHMC.

CHAPTER I

STUDY UNITS: PURPOSE AND USE

1.1 Introduction: Study Unit Definition

The purpose of defining study units for the plan is to reduce the total archaeological information available in Pennsylvania to manageable and archaeologically relevant subdivisions. This accomplishes one of the main goals of cultural resource management: identifying cultural resources and organizing the available data in categories that have both archaeological and management significance (cf. the RP^3 strategy: U.S. Dept. of the Interior 1980). Although the necessity of this step is generally recognized, the form and content of the study units selected by various states in developing their state plan varies widely.

There are a number of possible criteria by which to divide a state into study units. Geographical or chronological units of some sort have been used, as suggested in RP^3, by all states currently preparing state plans. While both geographical and chronological divisions of the data base are necessary in analyzing the available information, there is a wide choice of possible emphases in defining the study units. There is, first, the choice of whether geographical or chronological categories will be given primacy. Geographical units have seemed appropriate for most state, although a chronological emphasis is possible in smaller states like Delaware with relatively little physiographic variety.

Geographical units vary greatly in form. Some states, Illinois and Maryland for example, have chosen units based on river drainages. The size and number of these drainage-based units may differ considerably: Illinois has decided on a few large regions while Maryland has divided the major drainages into nearly two dozen units. The alternative and preferred possibility is to define study units by major physiographic regions (cf. New Jersey) or some combination of drainages and physiographic regions. The fundamental goal should be kept in mind: to decide on units appropriate to the archaeology and environmental circumstances of the state. There is no one right approach.

An alternative, and as yet untried, approach is a definition of study units by major anthropological/archaeological theme or research topics. Davis (1981: 6-9) notes the difficulty with this approach but suggests, on the basis of experience with the Arkansas plan, that it may avoid the difficulties with fitting a current understanding of archaeology and cultural process to the traditional geographical or chronological categories. The problem with defining study units in this way is that of reorganizing and reinterpreting, in anthropological terms, data collected according to the traditional culture historical framework (or none at all) over the past 150 years. Because of the major problems in reworking the archaeological information compiled in the traditional historical framework, this approach, although seriously considered, was not adopted for the Pennsylvania plan. It is, however, suggested that a redefinition of study units by major anthropological themes (e.g. subsistence strategies, technology, trade and exchange, etc.) be attempted in future revisions of the plan and its study units.

The units chosen for this plan are based on the major physiographic provinces of Pennsylvania (Section 2.1). They are few in number and large, incorporating an enormous amount of sub-regional variety (Figure 1.1). The decision to define study units in this way was based on several considerations. First, from a theoretical point of view, it seemed essential to define units broadly and allow the researchers responsible for each unit some flexibility in deciding on the appropriate environmental, physiographic, and chronological subdivisions of their study unit. It seemed preferable to underdefine rather overdefine and arbitrarily narrow the analytical (and management) units. The further refining of unit definition was left to those familiar with the archaeology of the study area and responsible for the writing of the study unit summary. It was expected that the chronological subdivisions used in each chapter would be broadly comparable, being based on the traditional culture historical periods--Paleo-Indian, Archaic (Early, Middle, Late/Transitional), Woodland (Early, Middle, Late), and Contact/Historic--or some modification of them. However, given the somewhat arbitrary definition of study units, it was expected that the ecological or physiographic subdivisions would differ greatly. Units I and III (Coastal Plain/Piedmont and Western Plateau), for example, obviously incorporate several generally recognized ecologically and archaeologically relevant sub-units.

Second, the decision for a few large units had a practical basis. The experience of other states and the preliminary response from the archaeological community in Pennsylvania suggested that it would simply be too complicated and would delay completion of the study unit summaries to use more and more finely delimited units. Since this is basically a planning document, the timely completion of the summaries seemed an essential goal.

Contributors were given the freedom to adjust the form and content of their summaries to the realities of the archaeological data and history of research in their study units, but were asked to conform to the recommended minimum requirements of the following outline:

A. Purpose and objectives

B. Theoretical background and assumptions

C. Study unit definition

D. Relevant subdivision/periods

E. Literature review and evaluation of previous research

F. Environmental resources

G. Cultural resources

H. Subsistence/settlement/social patterns evident in the prehistoric and historic archaeological record

I. Major and subsidiary research problems

J. An evaluation of current knowledge and deficiencies

K. Recommendations for future data requirements and types of work needed

L. An evaluation of current and potential future impacts on archaeological resources

M. General policy and research recommendations: priorities

N. References

O. Optional: a list of archaeological and preservation constituencies, resources, facilities, etc.

1.2 The Use of the Study Unit Summaries

The summaries in Chapters 3 - 5 are intended as brief current syntheses of our understanding of the cultural, ecological, and specifically archaeological information for three regions of the state. Their purpose is not only to summarize archaeological knowledge and identify gaps in that knowledge, but to aid in establishing priorities for further work, provide the basic information necessary for determinations of site significance (see Volume I: Chapter 3), and identify regional threats to the archaeological record and thus aid in developing preservation plans. They are intended to assist the BHP staff in developing policies and procedures for NHPA Section 106 review and requests for surveys by forming a data base and guide for predictive modelling. Predictive models derived from this and other sources will allow probabilistic statements on site location to be made for various common types of environmental situations in Pennsylvania. The summaries are, further, intended for use by planners and agencies as a reference on the types and distribution of archaeological resources characteristic of a region which might be encountered during land-modification activities.

It is important that these summaries not be viewed as final or complete statements on the archaeology of a region, but as working models of our current understanding of that information, to be modified and refined periodically as new information becomes available. Properly used, they should aid in the collection and synthesis of that new information.

1.3 Unit IV: Northeastern Pennsylvania

A major gap in the regional coverage of Pennsylvania is obvious in the absence of a summary for Northeastern Pennsylvania (Eastern Appalachian Plateau and Poconos) (Figure 1.1). The state of archaeological knowledge for this region is totally unacceptable and justifies a concerted effort by the PHMC, Pennsylvania Archaeological Council, and the Society for Pennsylvania Archaeology in the near future to remedy this situation.

The PHMC is currently considering proposals for a comprehensive survey program in this region. A first step in such a program should be a review and summary of previous research in Northeastern Pennsylvania. Much of this research has been in the form of small-scale contract surveys. Reports on this work are on file with the PHMC. The summarizing of information from these reports should precede the definition of research and management goals for the region. Future revisions of the State Plan should consider and incorporate the results of these efforts.

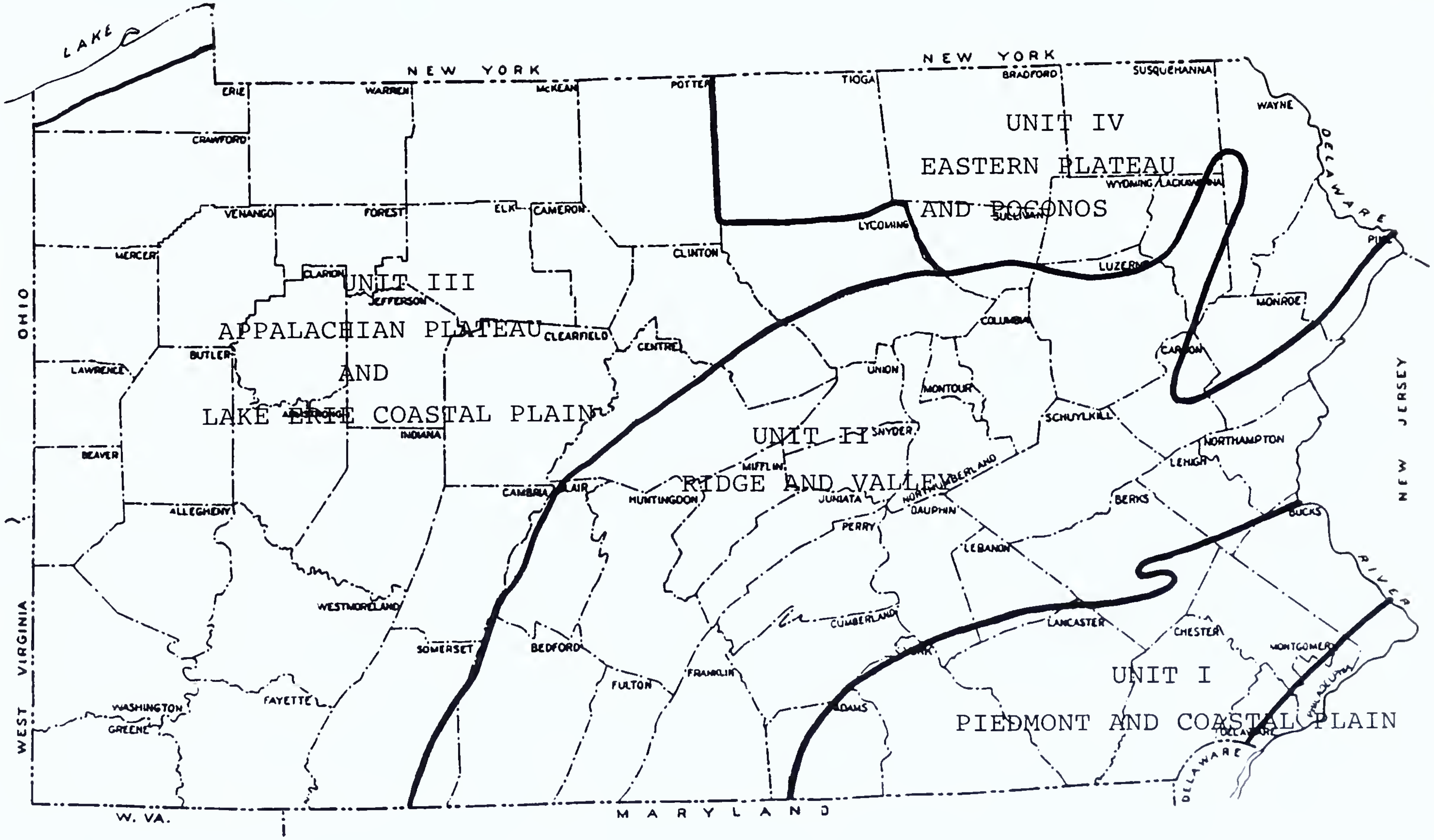

Figure 1.1
Study Units

CHAPTER 2

Environment and Culture History in Pennsylvania

2.1 The Ecological Background to Study Unit Definition

A complete treatment of the ecology of natural regions within the boundaries of Pennsylvania is beyond the scope of this summary and best left to the regional ecological summaries written for each study unit of the plan. The purpose of the following section is simply to outline ecological parameters to the study of Pennsylvania prehistory and to suggest reasonable natural boundaries for study units.

The United States as a whole may be divided into major physical or topographic regions of which only two are of relevance here. Pennsylvania falls primarily within the Eastern Highlands region with its southeastern portion within the Coastal Plain region. Of greater significance to the study of cultural adaptations are the physiographic provinces into which, following F. N. Fenneman (1938), geographers divide the continent and Pennsylvania. The five physiographic provinces of Pennsylvania are (see Figure 2.1): 1) the Coastal Plain province (Embayed Section); 2) the Piedmont Province (both Upland and Lowland Sections); 3) the Ridge and Valley Province (Middle Section) with which the Reading Prong of the New England-Arcadian Province may be included, 4) the Appalachian Plateau Province (including both the Glaciated and Unglaciated Allegheny Plateau), and 5) the Central Lowland Province (Great Lake section) (Powers 1966).

The coastal plain incorporates only a small section of southeastern Pennsylvania in the vicinity of Philadelphia. It forms a narrow band of Pleistocene sands and gravels of the the Cape May formation with recent alluvial and swamp deposit additions, adjacent to the older, hard, crystalline rocks of the Piedmont. The dominant environmental feature is the cross-cutting of the plain by the Schuylkill and Delaware rivers which, earlier as well as recently, provide access both to the sea and to the interior. The coastal plain, although contrasting with the piedmont to the northwest in soils and relief, shares with surrounding areas the typical humid continental climate and vegetation of the Temperate Deciduous Forest Biome. The lack of relief and the ease of access to routes of communication are distinctive features.

The Piedmont region contains some of the most agriculturally productive land in Pennsylvania and now, as in previous periods, is a favored area for settlement. The region is bounded on the east by the Fall Line, which parallels the course of the Delaware in southeastern Pennsylvania, demarcating the geological and topographic break between coastal plain and piedmont. To the west, the beginnings of the Ridge and Valley Province are marked by the ridge of South Mountain.

The relief is low (50-200 feet), the Piedmont forming a hilly plain whose surface is the result of weathering of an earlier folded mountainous region. As in the coastal plain, a major environmental feature is the cross-cutting of the region by the Susquehanna, Schuylkill and Delaware rivers. The gray-brown podzolic soils are fertile, as the continued success of farming in the Pennsylvania Dutch country demonstrates, but overexploited. However, their texture and structure allow them to hold moisture well and, with adequate rainfall and warmth, they are ideal for cultivation.

Before widespread clearing for agriculture, the oak-chestnut faciation of the Northern Deciduous Forest Biome was characteristic of this region and still remains in uncut areas, although the chestnut has been all but eliminated by the chestnut blight introduced earlier in this century. Deer and, formerly, wapiti were abundant and were the dominant species in this region. Small mammals (e.g. white-footed mice, squirrels, etc.), a variety of birds (warblers, thrushes, etc.), and small reptiles are characteristic, although the introduction of European agriculture has substantially reduced the variety of species.

Resources other than land and small game were scarce, although local outcrops of cryptocrystalline rocks were focal points of prehistoric activity in this region. The lower reaches of the Susquehanna, Schuylkill, Delaware, and their tributaries would have formed a network of routes for travel and transport within and across this region.

The Ridge and Valley Province, including the northern end of the Blue Ridge (South Mountain) and the Reading Prong and Great Valley, is the result of late Paleozoic orogeny and subsequent weathering. It reaches its greatest width in central Pennsylvania, lying to the northwest of the piedmont and southeast of the Appalachian Plateau in a band of parallel ridges up to 80 miles wide. Elevations range from 600 to around 2,000 feet above sea level.

The topographic contrast between ridge and valley is mirrored by soil, vegetational, and faunal characteristics. Forest cover is of the hemlock - white pine - Northern hardwoods regional type of the Deciduous Forest Biome (Braun 1950), forming a transition to the northern Coniferous Forest Biome, with an associated variety of animals including deer (now dominant), turkey, bear, squirrel, chipmunk, and small rodents and, formerly, mountain lion, wapiti, and wolf. Birds in great variety are resident--including woodpeckers, owls, and hawks, and, as summer residents, thrushes, warblers, and other small birds. Reptiles--box turtles, garter snake, water snake, rattlesnake, and copperhead--are common locally.

A variety of lithic resources--cherts, flints, and jaspers--were available locally to prehistoric occupants. Coal and iron were important mineral resources in the post-contact period and remain so today.

The outstanding environmental feature conditioning aboriginal cultural adaptations would have been the contrast between the topography and ecological correlates of the ridges and the valleys. The rich alluvial soils of the valleys provided suitable locations for base camps and agricultural villages, with the valleys and rivers flowing through them providing access to a variety of resources within a small area. Game and plant foods were distributed across the landscape in conformity with the local conditions of valley and ridge. The Ridge and Valley Province thus provided both prehistoric hunter-gatherers and agriculturalists with a productive and varied environment, milder in climate and more diversified in topography and biota than the Appalachian Plateau to the north.

The Appalachian Plateau Province consisting, in Pennsylvania, of both the glaciated and unglaciated regions of the Allegheny Plateau and the Allegheny Mountains, lies to the north and west of the Ridge and Valley region and extends to the lowlands surrounding Lake Erie. Its southeastern boundary is marked by the sharp rise of the Allegheny Front, overlooking the last valley of the Ridge and Valley region. In contrast to that province, valley bottoms are narrow and level land is scarce. Local relief may vary from 500 to 1,000 feet. In addition to the major rivers--the Susquehanna, Delaware, Allegheny, and Monongahela and their tributaries which rise in the Plateau and drain it--there is a dendritic pattern of streams corresponding to the rough, dissected plateau surface.

The glaciated portions to the northwest are higher in elevation (ca. 2000') with extensive level areas and many swampy areas or small lakes. Both glaciated and unglaciated regions of the plateau are distinctly wetter and cooler than regions to the southeast. Podzol and gray-brown podzolic soils, typical of cool humid forested regions, are characteristic. Agricultural productivity is limited by the acidic podzol soils, higher elevations, irregular topography, cooler climate and consequent shorter growing season. However, a variety of game and wild plants typical of Braun's (1950) mixed-mesophytic community were present prehistorically, making the region suitable for hunter-gatherer exploitation. The hemlock-white pine-northern hardwoods association, with maple-beech-hemlock regions to the north and local stands of oak and chestnut, characterized the plateau. Animal species of the plateau are generally those of the Ridge and Valley region including deer, bear, and abundance of small mammals (Shelford 1963) and, formerly, wapiti, mountain lion, and moose. Deer were probably abundant throughout the prehistoric period and, in combination with a variety of small game (beaver, turkey, squirrel), fish, and plant foods (especially nuts) provided a productive and reliable subsistence base for hunter-gatherer groups.

The Central Lowland Province is represented in Pennsylvania to the northwest of the plateau by the narrow strip (ca. 10 miles wide) of lowlands along Lake Erie. An exhaustive summary of the geology, hydrology, topography, climate, vegetation, and fauna of this region, as they relate to aboriginal subsistence and settlement, has been provided by Beckerman (in Curtis and Hatch 1981: Chapter 2). A summary of this and related sources (Johnson, Richardson, and Bohnert 1979; Powers 1966) follows.

The area's topography has been substantially formed by glacial scouring during the Pleistocene advances and by post-Pleistocene changes in the shoreline of Lake Erie with attendant wave action and sediment deposition. The modern climate is continental and severe but ameliorated by the prevailing movement of air masses from the west and off the lake. The warming effect of proximity to the lake creates a longer frost-free period during the year. However, the region experiences heavier snow and rainfall as moist air from the lake meets the land. The drainage pattern is of minor streams north to the lake and, with fertile soils and abundant precipitation, contributes to the productivity of the area. The beech-maple forest is dominant, with local stands of other species (oak and hickory), and probably was so in prehistoric times. Faunal resources included an extremely rich variety of fish: sturgeon, pike, bass, perch, trout, whitefish, and catfish were plentiful and made Lake Erie unusually productive, even compared to the other Great Lakes. The complement of terrestrial animals included deer, bear, and possibly moose in forested areas; migratory waterfowl in lowland swampy areas; and a variety of small but abundant game animals: squirrel, muskrat, raccoon, and woodchuck. The subsistence base of prehistoric residents would have been supplemented by collected plant foods such as nuts (acorns, hickory, walnut, etc.).

2.2 A Summary of Pennsylvania Culture History

This section will make no attempt to describe study units in detail or to give a comprehensive description of Pennsylvania or eastern North American culture history and ecology. The purpose of the following is, rather, to provide the statewide context for study unit summaries and to place Pennsylvania relative to surrounding states in terms of broad trends in cultural development and environmental change.

Detailed and comprehensive accounts of the culture history of eastern North America may be found in Griffin (1952 a,b; 1964, 1967) and Willey (1966); Ritchie (1969) may be consulted for a culture historical sequence of immediate relevance to Pennsylvania prehistory. Kent, Smith, and McCann, (1971) present a general summary of Pennsylvania culture historical periods (see also Kent 1980, Witthoft 1965). Custer (1981a, 1981b), in a discussion of Delaware prehistory, has suggested revisions of the traditional classificatory scheme that bring its periods more into accord with an ecological and evolutionary interpretation in archaeology (see Chapter 3). This proposed revision will be examined and compared with the traditional scheme later in this section.

References for the ecological study of cultural change in Pennsylvania and eastern North America can be found in Calkin and Miller 1977, Carbone 1974, Curtis & Hatch 1981, Custer 1980, 1981a, 1981b, Griffin 1961, and Snethkamp, Ebright and Serena 1981, all of which have been heavily relied upon in preparing this summary. Standard references to the vegetation and fauna of the Northeast include Braun 1950, [forests], Shelford (1964), and Dice (1943) [biotic provinces] as well as the numerous contributions of Guilday [fauna] (e.g. Guilday 1971).

The traditional culture historical sequence is based primarily on changes in artifact type through time, on the assumption that artifact types are directly correlated with cultural types and that a shift in artifact style therefore indicates a shift in cultural focus or the occupation of an entirely new group. This assumption (the "Coe Axiom" criticized by Snethcamp, Ebright, and Serena 1981) rests on a normative view of culture that has been the subject of abundant discussion and criticism in the archaeological literature of the past fifteen years (e.g.. Binford 1968, Struever 1971). Recent attempts to interpret culture historical periods in terms of adaptation and ecology have shifted and reorganized these periods, as discussed below.

2.2.1 Paleo-Indian Period

During the Paleo-Indian period the first humans entered North America and established a pattern of life adapted to the glacial conditions characteristic of the period before ca. 10,000 B.P. The precise date of the arrival of groups across the Bering land bridge is still a matter of debate, although suggestions of dates as early as 38,000 B.P. (for the Lewisville site, Texas) have been made on uncertain evidence. Also based on questionable evidence, although perhaps more reasonable, are dates of 28,000-22,000 B.P. for sites in Alaska, Mexico, and South America. One of the best-documented dates for early occupation in North America is that of ca. 17,000-14,000 B.P. for Meadowcroft rockshelter in Pennsylvania, based on over forty C-14 dates. Certainly by ca. 13,000-12,000 B.P. the typical Paleo-Indian pattern could have been established throughout most of North America, including Pennsylvania. Precise dating, however, remains difficult and great reliance should not be placed on any one date.

Paleo-Indian groups adapted to a climate, vegetation and faunal spectrum considerably different from that of the present. Although the glaciers covering large parts of North America and the northern portions of Pennsylvania began to retreat ca. 13,000 B.P., a modern (Holocene) climate was not established until ca. 10,000 B.P.

Until this time, glaciers covered the northern counties of Pennsylvania and a wetter, cooler climate with little seasonal variation prevailed in the unglaciated portions. In the southeastern portion of the state, large areas of grasslands mixed with coniferous and deciduous forest elements characterized and coastal plain and piedmont. Typical of the unglaciated areas were forests of spruce-pine-hemlock and large mammals adapted to the cold climate such as mastodon, woodlands bison, and, in particular, the barrenground caribou. In addition, secondary but important environments included swamps, bogs, and glacial lakes, all of which would have served as game-attractive areas and, consequently, as foci of human subsistance activities. Other late Pleistocene fauna of possible significance to Paleo-Indian groups of hunters were mammoth, horse, deer giant beaver, moose, and elk (Funk 1972).

The subsistence pattern tied to these resources is believed to be that of mobile hunting and gathering with an emphasis on the hunting of large game animals. It should be noted, however, that there is in this region no direct association of large Pleistocene fauna with any Paleo-Indian remains (Curtis & Hatch 1981:3.6) and ethnographic information suggests that, although hunted, these large species may have formed a relatively small part of the Paleo-Indian diet. The portrayal of Paleo-Indians as big-game hunters should be considered a tentative reconstruction, therefore, subject to testing by further research.

The vegetational assemblage characteristic of Pennsylvania during the Pleistocene suggests that the variety of plant foods available was small, particularly when compared to the abundance and variety of animal foods. For this reason, the Paleo-Indian subsistence pattern probably bore more resemblance to that of recent ethnographically-known Eskimo groups than the mixed subsistence strategy, focused on gathering, suggested for most hunter-gatherers (Lee & DeVore 1968). However, Custer (1981a:148-149) has noted that evidence from the Shawnee Minisink site (McNett and McMillan 1974) in the Upper Delaware Valley has produced a variety of plant remains indicating a somewhat greater reliance on gathering during the Paleo-Indian Period (if the dating of the site to the terminal Pleistocene holds; Kaufmann and Dent 1982).

Custer (1981a) would, on the basis of a consistent hunting and gathering adaptation to similar environments merge Paleo-Indian and Early Archaic material into one period . The distinction between late Paleo-Indian and Early Archaic has always been questionable, based on minor and ambiguous changes in artifact styles. Custer's scheme reasonably emphasizes group adaptations to the late Pleistocene/early Holocene environment which he sees as constant throughout the time span ca. 10,000-8,000 B.C. (or later). This is not to deny any change, environmental or cultural, during this period. In fact a division into Early (fluted point technology) and Late Paleo-Indian (Plano/Dalton-Hardaway) is usually made (Mason 1962) on the basis of artifact types. Alternatively, a tripartite division may be made: Early (Clovis), Mid-Paleo, and Late (Dalton-Hardaway) on the basis of point types and technology (Custer 1981a).

These divisions also correspond to shifts in adaptive strategies, although the basic Paleo-Indian mobile hunting pattern was essentially unchanged throughout. Changes in the Late Paleo-Indian period include a shift in hunting away from a focus on caribou to an emphasis on a greater variety of species inhabiting the mixed pine-deciduous forest which replaced the Pleistocene coniferous forest. The subsistence base was still primarily animal foods, but a new variety had been introduced with changes in climate and vegetation. Corresponding to the altered subsistence strategy was a change in site locations, mirroring the variety of newly available food sources.

Gardner (1978) has suggested that lithic resources were the determining factor in site location for Paleo-Indian hunter-gatherers representing fixed points in the schedule of yearly movements. Thus, the range of sites we should expect to find for the Paleo-Indian period includes a variety of activity loci relate to stone procurement as well as less extensive sites devoted solely to activities (hunting/gathering) other than lithic material processing. Gardner's typology of sites expected for this period reflects this focus on lithic materials as the determining factor in Paleo-Indian settlement, including: quarry sites, quarry reduction stations, quarry-related base camps, non-quarry-related base camps, base camp maintenance stations, outlying hunting sites, and isolated point finds. The exact distribution of these site types would, of course, reflect local physiographic and biotic conditions but the underlying pattern would be broadly consistent: small, mobile groups (bands, in Service's (1971) terminology) of hunters following a seasonal pattern of movement tied to fixed locations of lithic resources and adjusted to the seasonally-changing locations of game animals.

One aspect of this adaptation was a distinctive set of artifacts of which the Clovis, Plano, and Dalton-Hardaway points are typical. A range of artifacts was certainly created by Paleo-Indians, but only lithics have been preserved. These provide evidence corroborating the picture of a Paleo-Indian subsistence pattern developed above. The fluted and other points have been interpreted as particularly well-suited to the killing of large Pleistocene mammals. Other tool types relate to the butchering and tool manufacture activities associated with hunting. Debitage from the lithic reduction process used to create these points forms the bulk of artifactual material recovered form Paleo-Indian sites.

The majority of sites in Pennsylvania dated to this period consist of isolated point finds (although note the exceptions described elsewhere: e.g. Shoop, Meadowcroft), presumably the result of hunting or related activities or very short occupations. Again, the distribution of sites, although incompletely known, is consistent with the model of mobile groups of hunters following a seasonal round of hunting and gathering activities tied to fixed points of chert, flint, and jasper outcrops. Sites in a variety of contests, from Meadowcroft rockshelter to the Shoop site and the isolated point finds, indicate both the variety of habitats used and a range of activities dominant at various sites, conditioned by the basic requirements of water, lithic raw materials, shelter, and access to game animals.

2.2.2 Archaic Period

With the end of the Pleistocene between 11,000 and 9,000 B.P. a newly diversified biome and moderate climate was established over most of North America. Milder temperatures and the retreat of the ice permitted a more heterogeneous vegetation and fauna to replace the subarctic biotic regime characteristic of the Pleistocene. Cultural adaptations to this environmental change are characteristic of the Archaic period. Corresponding to the new diversity of the environment was a wider range of subsistence activities and a consequent variety in patterns of movement and the types of sites and artifacts. Subsistence activities shifted to exploit the greater biomass characteristic of the Holocene climate and the greater potential productivity of the landscape. The vegetational variety represented by the oak-chestnut deciduous forest encouraged an expansion of the gathering activities of hunter-gatherers and a shift in the mixture of activities to a pattern similar to that of ethnographically and historically-known groups, as suggested in Witthoft's model of Archaic subsistence (Witthoft 1971a). Pleistocene megafauna were replaced by deer, elk, bear, turkey and other species of the deciduous forest as the primary game animals stalked by Archaic hunters. Not only did the animals hunted change, but also the methods appropriate to hunting species more uniformly distributed over the landscape. Stalking and base camp-focused hunting replaced the seasonal patterns associated with hunting of migratory species and the scheduled movement required of Paleo-Indian subsistence. Projectile point changes reflect this adaptive shift: smaller, barbed points replace the larger lanceolate points of the Paleo-Indian period. The new emphasis on gathering of plant foods, particularly nuts or seeds, was reflected in the use of stone grinding implements. Trapping and fishing, taking advantage or the wider range of small game and aquatic resources present, became an important part of the primary forest efficiency posited by Caldwell (1958) for North America during this period. These activities were individual or small-group efforts focused on predictable movements of animals over a relatively small area--around water sources in the case of small game or along rivers and streams in the case of small game or along rivers and streams in the case of anadromous fish. They represent a marked shift from the large-group efforts necessary for the hunting of large game characteristic of earlier periods to smaller-scale activity adapted to the seasonal movements of food animals in a period of greater seasonal variation.

The general pattern suggested for the Archaic is, in summary, one of seasonal movement by small bands of hunter-gatherers through a series of base camps, hunting/butchering stations, and special-purpose camps adapted to a wide variety of animal and plant food resources. The greater variety of subsistence pursuits is indicated in the archaeological record by a greater variety of site types, artifact types, and floral or faunal remains.

The chronological limits of this period are not precisely defined. The usual chronology involves a division of the Archaic into Early (ca. 8,000-6,000 B.C.), Middle (6,000-4,000), and Late (4,000-1,000 B.C.), (Griffin 1967) based primarily on correlations with major climatic changes, which, however, are now subject to serious question (Curtis and Hatch 1981). Custer (1981 b) would merge the Early Archaic (pre-6,500 B.C.) with the Paleo-Indian period as a uniform adaptation to similar conditions and separate the Middle Archaic (6,500-3,500 B.C.) from the Late as a distinctive period characterized by the subsistence/settlement patterns outlines above. In this scheme (Figure 2.1) the Late Archaic would be merged with the Transitional and Early Woodland in a (Late Archaic/Woodland I) period of pre-adaptations to agriculture. Regardless of the periodization adopted and the precise limits of chronologies used, the essentially continuous nature of cultural processes and change should be emphasized. The chronological divisions of the traditional literature are based on artifact style changes and the relation of artifact change to cultural change or environmental adaptation remains embiguous in the absence of additional information corroborating cultural change. Many of the variations reflected in the typical Early Archaic point typology (Kirk, Palmer, St. Albans, Lecroy) may be functional or material-specific rather than of cultural or geographic significance. Given the general disagreement on the adaptations represented by Early, Middle, and Late Archaic artifactual assemblages, it seems unreasonable to attach any considerable importance to precise chronologies or artifact typologies. Despite the lack of consensus on typology and chronology a core Archaic cultural pattern is discernible, as summarized above.

Additional trends are apparent during this period. With greater environmental productivity and stability and the evident population increase indicated by the growing quantity of material remains there is an increasing degree of sedentism and emphasis on occupation of larger base camps. Related to greater sedentism is the growing emphasis on collected plant foods, evidence for which is provided by the expanding inventory of plant, seed, or nut processing equipment. Larger populations and the filling-in of the landscape with new and larger settlements are suggested by the widespread and sudden distribution of Late Archaic artifacts (Brewerton, Lamoka, generally "narrow-stemmed points"), throughout previously slightly-occupied areas. Not only the absolute bulk of material but the number of sites of all types increases dramatically through the Archaic period and especially during its latter stages. Archaic hunting camps become ubiquitous in many areas of the state, although the disturbed and ephemeral character of many of these site precludes reliable generalizations on the cultural patterns they represent.

Enough is known, however, to posit a probable model of Archaic settlement of well-defined drainage regions by relatively small (ca. 100) groups. Such a pattern is proposed for several regions throughout eastern North America (Gardner 1978, Winters 1969, etc.) with variations. Winter settlements alternated in the yearly cycle with summer base camps, transient fall and spring camps, and hunting camps used throughout the year. Essentially the same pattern is suggested by Gardner's typology of macro-band camp, micro-band camp and procurement camps within a region focused on a major stream and tributaries and fixed lithic resources. This pattern represents an overall shift through the Late Archaic from a diffuse to a focused adaptation (Cleland 1966).

Also characteristic of the Late Archaic is the appearance of mortuary ceremonialism in complexes such as the Red Ocher, Glacial Kame, and Old Copper. The essential features of these complexes are similar--the use of red ocher in burials, copper implements, ceremonial blades and points of stone, shell gorgets, etc.--and may indicate the rise of social differentiation expressed in burial goods. They relate, as well, to regional patterns of trade or exchange. Thus, directly or indirectly (through control of trade), mortuary ceremonialism can be tied archaeologically to the first development in the Northeast of non-egalitarian organization.

Regional distribution of resources and the consequent exchange of materials or finished items (e.g. copper) probably became increasingly important during the Late Archaic along with the elaboration of regional artifact styles, again arguing for the development of social differentiation and the differential control of resources it implies (Ford 1974). These trends were continued and elaborated in the succeeding Woodland periods with the rise of complexes like Adena and Hopewell.

2.2.3 The Transitional Period

The appearance of new projectile point types, the use of steatite for bowls and cooking vessels, a greater reliance on aquatic resources inferred from the quantity of fishing equipment (fishhooks, sinkers) in artifact assemblages, and the increased use of rhyolite for projectile points have been taken to indicate a distinctive adaptation or influx of new groups during the period ca. 1,800-1,000 B.C., overlapping the end of the Archaic (Ritchie 1969).

The cultural pattern represented by these characteristics of Transitional material assemblages has been described (Ritchie 1969; Witthoft 1971b) as involving greater reliance on waterways, both for food and mobility. The greater degree of mobility was presumably related to the use of canoes and to the procurement of rhyolite from a limited number of sources. In general, the Transitional adaptation is not significantly different from that of Late Archaic groups whose development can be traced over the course of the centuries before Woodland cultures and agriculture appear ca. 1,000 B.C. The patterns of regional exchange and technological specialization claimed for the Transitional are part of the developmental trends to greater group size, sedentism, technological variety, and exchange relations known for a wide area during the Late Archaic and Early Woodland.

2.2.4 Woodland Period

The outstanding development during the Woodland period was the origin of plant domestication and the beginnings of agriculture ca. 1,000 B.C., although the first appearance of cultigens varies from area to area and the period was originally defined by the presence of new artifact types, notably pottery. The development of agriculture probably had an important relation to increasing sedentism of the Woodland period and the eventual establishment of permanent agricultural villages over much of North America. The assumption of a causal relationship between agriculture and sedentism should be avoided, however, as the comparative evidence on agricultural origins and village life form Mesoamerica and the Near East demonstrates.

The earliest cultigens from Pennsylvania come from a (widely questioned) dated stratigraphic context at Meadowcroft rock shelter: Cucurbita pepo (squash)--ca. 9th century B.C.; Zea mays (maize, corn)--ca. 4th century B.C. [the earliest well-dated and stratigraphically controlled maize known for eastern North America, according to Adovasio and Johnson (1981)]. There have been suggestions of earlier domestication without, however, adequate substantiation. The shift over a long period to agricultural villages was probably facilitated by continuous changes in climate to warmer and dryer conditions yielding a generally more productive environment, as seen in the increase in non-arboreal pollen in palynological profiles throughout the Early and Middle Woodland.

A new pattern of settlement accompanied the change to sedentary agricultural life. This pattern established itself only gradually, but by Late Woodland times, substantial populations throughout the Northeast were established in permanent or semi-permanent villages subsisting on the products of agriculture, primarily maize, supplemented by collected plants, game animals, and fish. These groups used pottery, probably introduced during the Late Archaic, on a regular basis in cooking, storage, and a burial goods.

The demographic and epidemiological effects of sedentism are important but complex and will not be discussed here. In general, population size increased but population growth was probably offset by increased incidence of diseases (e.g. tuberculosis), poorer nutrition, and higher levels of intra- and inter-group conflict. Groups not only increased in size, but were nucleated to an increasing degree. Larger groups spent longer periods in a few well-established base camps, with ancillary activities conducted by smaller groups at outlying hunting, butchering, and other special-purpose camps. The typical settlement pattern thus became by the Late Woodland period one of relatively large villages on agriculturally productive land along rivers, particularly at the confluences of streams, with surrounding special-purpose camps located to take advantage of a variety of resources: stone for tools and weapons, fish, game, nuts, and various non-cultivated plants. Earlier settlement patterns trace a gradual development from the late Archaic pattern of small, multi-family, seasonal base caps to the nucleated, more permanent settlements of the Late Woodland period. The details of this major shift are vague for the Early and Middle Woodland periods because of the relative paucity of excavated material relating to settlement types.

Widespread trade or exchange is indicated by the quantity and nature of exotic items found in burials of the Early and Middle Woodland. Burial mounds and trade items suggest that local Early Woodland groups participated to some degree in the Adena complex, although only Western Pennsylvania, along the upper reaches of the Ohio Valley, seems to be directly involved, as witnessed by the presence of Adena stemmed points, tubular clay and stone pipes, and Adena burial ceremonialism. Adena-like traits, however, extend to other portions of the state and New York.

Even less settlement evidence is available for the Middle Woodland in Pennsylvania, but there is no suggestion of a major and abrupt shift in subsistence or settlement. There is more ceramic material from Pennsylvania in this period. Middle Woodland contacts with the Hopewell of the midwest are known from western Pennsylvania in the form of burial mound ceremonialism and associate items like cache blades, copper earspools, and platform pipes (Carpenter 1950). Excavations at the Watson site have demonstrated both participation by local western Pennsylvania Middle Woodland groups in the Hopewell exchange network and the continuity of development from earlier Adena-related culture. (Kent, Smith and McCann 1971) It may be assumed that the diverse Middle Woodland cultures to the east were in contact, directly or indirectly, with elements of the Hopewell interaction sphere. However, the decline of the Hopewell by the end of Middle Woodland times does not seem to be linked in any obvious way with changes in the local Middle Woodland manifestations ca. A.D. 500-1,000, although it has been suggested, on debatable evidence, that a climatic shift to cooler, wetter conditions at this time influenced these developments (Ford 1964, Griffin 1961).

The beginnings of Late Woodland cultures are variously dated between A.D. 500 and 1,000 (Curtis and Hatch 1981:3-64) and take the form of Monongahela Culture in the Upper Ohio Valley and Clemson's Island in the Susquehanna drainage. The period ends ca. 1600 with European contact and the disruption of aboriginal settlement-subsistence patterns. The intervening 600-1,000 years witness the expansion of population: both numbers of people and numbers of settlements. Maize agriculture becomes well-established at the end of the Middle Woodland or beginning of the Late Woodland although the cultigens involved were known earlier.

Probably correlated with an expanding population and consequent pressure on available resources (although this is far from proven) is an increase in conflict between and within groups. Warfare is attested by a dramatic increase in the incidence and scale of fortifications, and was probably a major factor in the general trend to agglomeration of populations within fortified settlements. This, the nature and distribution of burial items, and the internal site differentiation evidenced by longhouses, suggest the development of status differences at this time, with warfare and the related leadership requirements favoring the eventual development of permanent, centralized authority. Increased emphasis was placed on river floodplain settlement. Substantial permanent or semi-permanent settlement on rich alluvial land allowed greater agricultural productivity, centralized access to a range of non-agricultural resources, and a better defensive position. Developments in one area may be taken as typical of the general character of this period: In the Susquehanna drainage, the sequence of occupation--Clemson's Island, Shenk's Ferry, Susquehannock--gives evidence of increasing settlement size and fortification of villages by the Susquehannocks. Subsistence shifted from the diverse regime focused on agriculture complemented by hunting, to fishing and collecting of wild plants during the Clemson's Island-Shenk's Ferry period, to a heavier reliance on agricultural products by the Susquehannocks. Pottery occurs throughout the Late Woodland but Susquehannock groups were involved in trade and resource procurement networks which yielded a more diverse inventory of material culture, reflecting the variety of items obtained through trade as well as the greater selectivity possible in resources (clay, temper, etc.) used.

There is no evidence to suggest that most Pennsylvania Late Woodland (Woodland II) groups participated in or were directly in contact with the highly-elaborated Mississippian culture of the central U.S. (Willey 1966). Monongahela sites have been linked to Mississippian culture and the Fort Ancient culture of Ohio through pottery types present, but they certainly do not display the degree of social complexity and political development characteristic of the large Mississippian sites. Evidence of trade or other contacts such as pottery should not be confused with shared social, political, and economic patterns. Monongahela culture remained an essentially local Late Woodland phenomenon.

The Late Woodland pattern described above was that characteristic of Pennsylvania and the surrounding region when contact with European explorers was established ca. 1600. Contact seems to have exacerbated some of the trends already developing during the terminal phase of the Late Woodland. Political confederation, such as the League of the Iroquois, and warfare were encouraged by economic and political pressures introduced by Europeans. The background for political expansion and conflict existed before contact but these tendencies reached destructive proportions after the early 17th century.

2.2.5 Contact/Historic Period

Europeans first established contact with the aboriginal groups of the Pennsylvania region around 1600. John Smith's encounter with the Susquehannocks (see Section 2.1) in 1609 and Henry Hudson's voyages of the same period mark the beginnings of well-documented relations between English, Dutch, French, and the Indian "nations" occupying what is now Pennsylvania: Delaware (Lenni Lenape), Susquehannock, Monongahela, Erie, and the Iroquois (originally to the north of Pennsylvania's modern boundaries). The subject is complex since we have, for this period, information on more than environmental conditions and the material evidence for adaptations to the environment. Moreover, it is clear that trade and other relations with Europeans had a far greater impact on indigenous culture than any other ecological or social factor. Detailed accounts and interpretations of the effects of contact are available; of particular relevance are: Spicer 1969, Wallace 1961, Weslager 1972.

The outstanding effects of contact with Europeans may be summarized as: 1) depopulation due to disease, 2) an increase in inter-group warfare caused by competition for access to the fur trade, and 3) an increase in dependence on European goods to the exclusion of traditional technology (Jennings 1968). As a result of the first two factors, depopulation and warfare, much of the history of the first two centuries after contact is an account of population displacement, as groups moved from long established homes in response to the shifting political forces. The threat of warfare and raids came as much from other Indian groups as from the westward pressure of European traders and settlers. The Iroquois League became the dominant political force in opposition to the Europeans as it attempted to control trade by a program of political consolidation, diplomacy, and systematic warfare. Raids and pressure exerted on surrounding groups from Michigan to New England were aimed at establishing Iroquois hegemony throughout much of the Northeast. Algonkian groups such as the Delaware, as well as Iroquoian groups like the Susquehannocks, came under the domination of the Iroquois confederacy or were driven from their homes by raids. The overall effect of this warfare and insecurity was the prevailing pattern of movement of aboriginal groups throughout the Northeast. The precise location and identity of groups within the boundaries of modern Pennsylvania changed continually during the early post-contact period. The Susquehannocks dominated much of this region in the early 17th century, their territory extending from the Allegheny Mountains to the eastern limits of the Susquehanna drainage and the territory of the Delaware to the east and south. To the north the Iroquois confederacy controlled present-day New York and competed with the Susquehannocks for control of the fur trade. The Susquehannocks had achieved considerable success as middlemen in trade with the Europeans by the middle of the 17th century, but the military force of the Iroquois prevailed and by 1675 the Susquehannocks had been driven from most of their territory.

To the southeast the Delawares, an Algonkian group, came under the dominance of, first, the Susquehannocks, and later, with the destruction of Susquehannock power, the Iroquois. Pressure from European settlers led to the migration of Delawares first to the Susquehanna basin and, later, to the Allegheny and Ohio Valleys. The Delawares, never organized politically to the degree of the Susquehannocks or Iroquois, were at the mercy of larger political forces, both aboriginal and European.

The status of the Monongahela peoples, occupying the land west of the Alleghenies, during the early historic period, is unclear. It is assumed that the archaeologically-attested settlement of this group during the Late Woodland continued until disruption by Susquehannock or Iroquois (Seneca) expansion from the east and north (Wallace 1961: 13-14) early in the historic period. Diseases introduced by the Europeans may have contributed to the decline of the Monongahela. In any case, their disappearance around the time of contact left large areas of western Pennsylvania virtually uninhabited until the migrations of the Delaware to this region.

The position of the Eries on the southern shore of Lake Erie is equally unclear. Historical accounts list them as participants in the struggle for control of the fur trade until their defeat at the hands of the Iroquois. However, the extent and duration of their occupation of northwestern Pennsylvania and adjacent areas of Ohio and New York before their defeat and dispersal ca. 1655 is debatable in the absence of direct historical references.

The archaeological record of the early historic period demonstrates a continuity in aboriginal patterns until the penetration of European trade goods in the latter part of the 17th Century. (Custer 1981b, Witthoft 1965). The typical Late Woodland artifact assemblage is gradually replaced with an admixture of European brass vessels, guns, glass beads, clay pipes and bottles. Proportions of aboriginal items decrease steadily throughout this period with a greater dependence on European imports evident in excavated assemblages (e.g. the Schultz and Strickler sites). Locations of sites change as well, with historic period settlements located with regard to trade contacts and routes. The migrations of the later historic period, of course, greatly altered the pattern of aboriginal settlement as previous inhabitants of Pennsylvania such as the Susquehannocks and Delawares are dispersed or pushed out of their former territories and other groups, the Tuscarora and Shawnee for example, moved into the region.

The later historic period (ca. 1700 - present), although amply documented historically and archaeologically, and directly relevant to the present conditions of life in Pennsylvania, is too complex an issue to be adequately treated here. Klein and Hoogenboom (1980) provides an excellent summary of Pennsylvania history with current references to more detailed accounts of various topics of archaeological interest in the historic period. More specific information on the historic period may be found in the following chapters.

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CHAPTER 3

ARCHEOLOGICAL RESOURCES OF THE PIEDMONT AND COASTAL PLAIN IN SOUTHEASTERN PENNSYLVANIA

3.1 Preface by Daniel G. Roberts

This chapter presents background information pertaining to the archeological resources of the Piedmont and Coastal Plain of southeastern Pennsylvania (Figure 3.1), and serves as a regional component of the Pennsylvania State Archeological Plan. The data presented herein are designed to provide resource-specific archeological information in support of the management and planning initiatives presented elsewhere in the State Plan. Accordingly, the following contributions have organized regional data in a generalized fashion in concert with the study unit concept set forth by the former Heritage Conservation and Recreation Service (1980). The primary objective of the study unit concept as envisioned here is to order and explain the known variability of prehistoric, contact, and historic archeological resources in the Coastal Plain and Piedmont. This information, coupled with resource management and planning initiatives, can in turn be used by planners and agency officials to make archeological preservation decision-making a normal function of contemporary land-use planning in southeastern Pennsylvania, and coordinate such decision-making with the rest of the Commonwealth as a whole.

In the following discussions, a total of 20 study units applicable to the Coastal Plain and Piedmont are presented and defined within the framework of three broadly defined diachronic concepts, including prehistoric (15,000 BC-AD 1600), contact/historic (AD 1600-1740), and historic (ca. AD 1638-1930). With regard to prehistoric and contact/historic archeological resources, the study units are defined primarily on the basis of temporal-chronological considerations, and include the following:

Paleo-Indian/Early Archaic (15,000 BC - 6500 BC)
Middle Archaic (6500 BC - 3000 BC)
Late Archaic, Early Woodland, and Middle Woodland (3000 BC - AD 1,000)
Late Woodland (AD 1,000 - 1600)
Late Contact (AD 1600 - 1640)
Early Historic (AD 1640 - 1680)
Late Historic (AD 1680 - 1740)

Due to the complexity of the historical record, the historic archeological study units are defined on the basis of two conceptual frameworks, including one defined on temporal-chronological considerations and one on thematic considerations, as follows:

Temporal Study Units

Period of Initial Settlement (ca. 1638-1682)
Anglo-Colonial Period (1682-1782)
Federal Period (1782-1820)
Early Victorian Period (1820-1865)

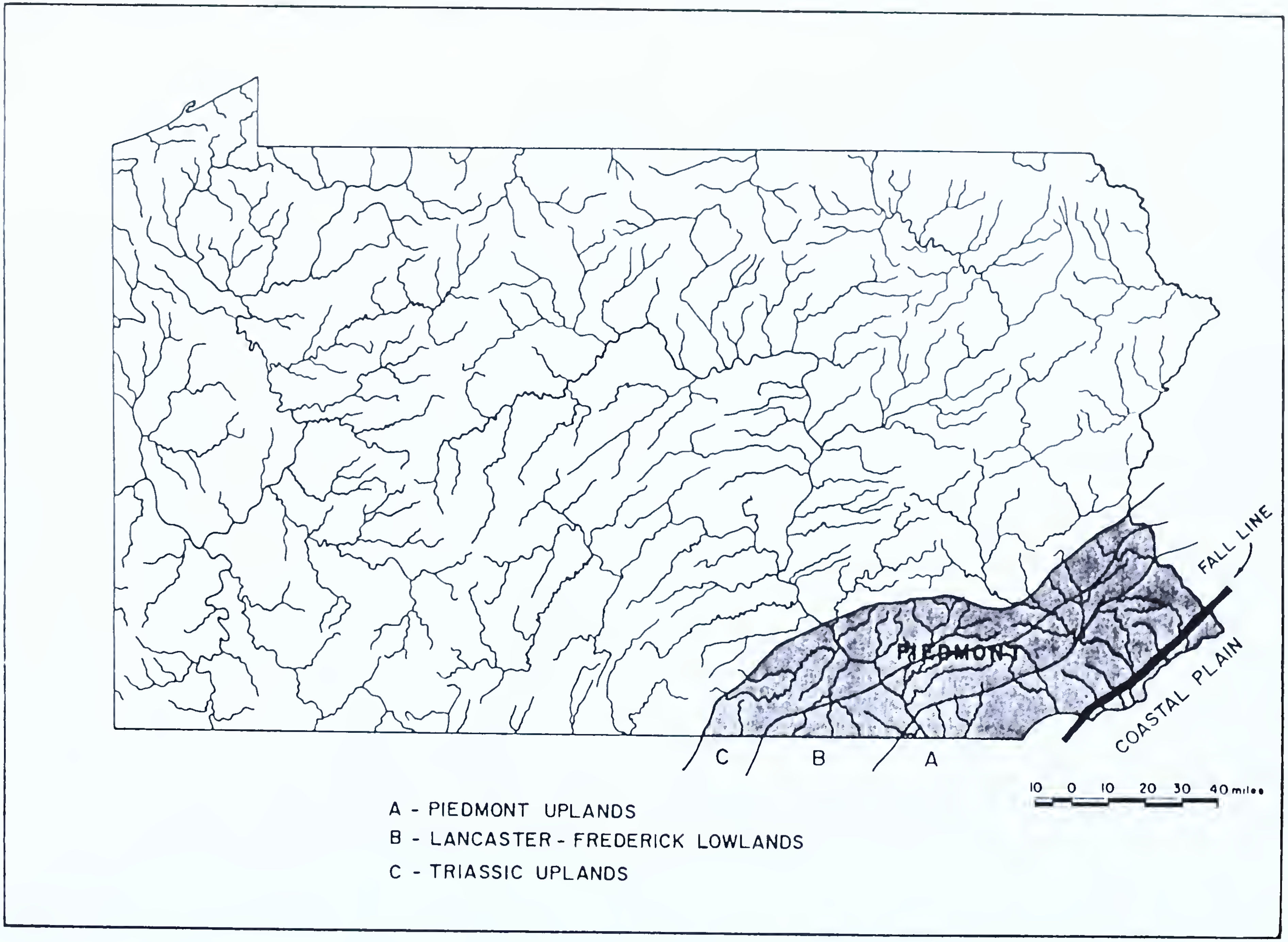

Figure 3.1

The Piedmont and Coastal Zone

Late Victorian Period (1865-1900)
Early Modern Period (1900-1930)

Thematic Study Units

- Mercantilism and Commerce
- Agriculture
- Private and Public Institutions
- Transportation
- Industry
- Residences
- Defense

It should also be noted that, although not assigned formal study unit status, demographic considerations with regard to historic archeological resources have also been taken into account. This led to the identification and discussion of three additional classes of historic archeological sites which cross-cut both the temporal and thematic study units and, accordingly, the recognition of a distinction between urban, suburban, and rural historic archeological resources.

In addition to the identification of appropriate study units for the Coastal Plain and Piedmont of southeastern Pennsylvania, the present document also outlines, in a generalized fashion, information on research priorities, data voids, resource stress, both current and anticipated, as well as management considerations for the various classes of resources known or anticipated for the Coastal Plain and Piedmont. Together with the framework for cultural resource management and other information provided elsewhere in the State Plan (Volume I), a solid foundation for archeological preservation planning for the southeastern portion of the Commonwealth is provided.

3.2 Prehistoric Archeological Resources of Pennsylvania's Piedmont and Coastal Plain by Jay F. Custer, University of Delaware

3.2.1 Introduction

The purpose of this section is to review the prehistoric archeological resources of the Piedmont and Coastal Plain physiographic provinces of Pennsylvania. This review will specifically seek to define a series of study units (Heritage Conservation Recreation Service 1980) that describe the known variability of prehistoric archeological sites. The study units will then be used to develop a series of management strategies by noting the locations of known, and predicted locations of unknown, prehistoric archeological sites that are likely to significantly enhance our knowledge of the region's prehistoric populations. Stresses on these resources will also be considered.

The basic theoretical orientation of this study will be cultural materialism, or cultural ecology, which views culture as human extrasomatic adaptation in biosocial environments (Harris 1979; Price 1982). Consequently, study units will be described in terms of common biotic environments, resource distributions, and archeological evidence for common adaptations such as settlement patterns, tool kits, and social organizations.

3.2.1.1 Spatial Divisions

In seeking to define study units based on common adaptations, it is necessary to first specify areas within the region that have similar biotic environments. Climatic factors and edaphic factors (slope, soils, surface water, exposure) determine biotic environmental composition (Odum 1971). Climatic factors are best considered from a temporal perspective; however, spatial units that contain similar edaphic settings can be defined. Figure 3.1 shows five major areas within the region that have similar edaphic settings and each area is described below.

Coastal Plain - The smallest sub-division of the study area, the Coastal Plain is characterized by fairly low relief and considerable expanses of poorly drained swamps and marshes along the Delaware River and its tributaries. Throughout the past 15,000 years this zone would contain some of the most productive environmental zones of the study area. Especially important are juxtapositions of well-drained soils and poorly drained floodplain swamps and marshes.

Fall Line - The Fall Line is a transition zone between the low relief settings of the Coastal Plain and the more mountainous Piedmont. Because the Fall Line is a transition zone, it contains a wide variety of environments for human adaptations and has a high potential for archeological sites. Surface water is abundant in streams that cross the Fall Line scarp.

Piedmont Uplands - Rolling hills and considerable elevational differences characterize the Piedmont Uplands. Most of the surface water occurs in low-order drainages which often have associated small floodplain swamps and bogs. A few extensive areas of low relief are present including the Chester Valley and the Kennett Square Lowlands of Chester and Lancaster Counties. The environments of the Piedmont Uplands are somewhat less productive than other portions of the study area.

Lancaster-Frederick Lowlands - The Lancaster-Frederick Lowlands are characterized by extensive areas of low relief. Surface water is abundant in a variety of high and low order streams and there are extensive areas of poorly drained floodplains and sinkholes. The largest areas of high order drainage floodplains are found in this area along with the region's most productive agricultural soils.

Triassic Uplands - The Triassic Uplands are similar to the Piedmont Uplands in terms of relief, surface water, and productivity.

3.2.1.2 Temporal Divisions

Recent studies by Carbone (1976, 1982) and others (Curry and Custer 1982) have shown that there have been pronounced changes in climates and environments in the Middle Atlantic over the past 17,000 years. These changes were characterized by five episodes of stable climate and environments separated by short intervals of abrupt climatic change. Table 3.1 lists the episodes and their dates based on the work of Wendland and Bryson (1974). Table 3.2 lists the environments that would be found in each spatial division during these climatic episodes and is based on the work of Carbone (1976, 1982), Custer (1983a), and Braun (1967).

The episodes of similar environments provide a basis for defining study units of similar adaptations. Because most of the societies studied were hunters and gatherers, or simple horticulturalists, their adaptations were greatly constrained by the biotic environment. Although the effects of social environments upon adaptations were important, the major environmental changes that defined the episodes noted in Table 3.1 have been correlated with major adjustments in regional prehistoric adaptations (Gardner and Carbone n.d.; Custer 1983a). Table 3.1 shows the major cultural periods that are correlated with the environmental episodes. In some cases cultural periods have been combined to facilitate discussion and underscore their similarities in basic adaptations. The discussion of the prehistoric archeological data will be organized into the following four basic temporal divisions. Paleo-Indian/Early Archaic, Middle Archaic, Late Archaic/Early Middle Woodland, and Late Woodland.

3.2.2 Study Unit Summaries

3.2.2.1 Introduction

The following study unit summaries will discuss the available prehistoric archeological resources for each spatial division during the time periods noted in Table 3.1. The major trends in human adaptations will be noted and technological, social organization, and ideological systems will be discussed where data permit. Predictable tendencies in site locations will be noted for varied functional classes of sites. This approach has proved to be useful in basic research in the region (Custer and Wallace 1982) and in cultural resource management studies (Custer 1983b; 1983c). The quality and range of the data base will also be discussed along with the major research questions that can be addressed within each chronological period.

3.2.2.2 Paleo-Indian/Early Archaic (15,000 BC - 6,500 BC)

The Paleo-Indian/Early Archaic study unit begins with the arrival of the first human inhabitants of southeastern Pennsylvania. Although there is some debate as to when this initial settlement took place, 15,000 BC can be used as a mid-point between the early dates proposed by some researchers (Adovasio *et al.* 1977) and more conservative estimates (Haynes 1977). As a whole, the Paleo-Indian/ Early Archaic study unit is characterized by adaptations to the distinctive environments of the Late Pleistocene and the period of transition to Holocene environments. These adaptations are based on a mobile lifestyle and hunting and gathering subsistence strategies that emphasize hunting more than any other time period in Eastern North American prehistory. The end of the study unit is marked by a change in adaptations

Table 3.1: Environmental Episodes and Cultural Periods

Dates	Episodes	Periods
15,000 BC	Late Glacial	Paleo-Indian/ Early Archaic
8000 BC	Pre-Boreal/Boreal	
6500 BC	Atlantic	Middle Archaic
3000 BC	Sub-Boreal	Late Archaic/Early-Middle Woodland
800 BC	Sub-Atlantic/Recent	
AD 1000		Late Woodland
AD 1600		

Table 3.2: Southeastern Pennsylvania Paleoenvironments

Spatial Units	Episodes Late Glacial	Pre-Boreal/Boreal	Atlantic	Sub-Boreal	Sub-Atlantic/Recent
Coastal Plain	mosaic of grasslands, boreal and deciduous forests; extensive swamps	boreal forests of spruce and pine	mesic oak/pine forests grasslands with estuarine marshes	xeric oak/pine forests and	oak/chestnut forests and estuarine marshes
Fall Line	mainly boreal forests with some swamps and bogs	same as above	mesic oak/hemlock forests with extensive swamps	xeric oak/hickory forests	oak/chestnut forests
Piedmont Uplands	same as above	same as above	same as above	same as above	oak/chestnut forests with some swamps
Lancaster/ Frederick Lowlands	same as Coastal Plain	same as above	same as above	xeric oak/hickory forests with extensive grasslands	same as above
Triassic Uplands	same as Fall Line	same as above	same as above	same as Fall Line	same as above

Sources: Carbone (1976, 1982); Custer and Wallace (1982), Custer 1983a; Kinsey (1977a); Martin (1958); Gardner and Carbone (n.d.); Bernabo and Webb (1977) that coincides with the onset of fully developed Holocene environments in the Middle Atlantic at ca. 6500 BC (Gardner and Carbone n.d.).

It should be noted that the combination of the Paleo-Indian and Early Archaic periods into a single study unit departs from the traditional cultural historical schemes used in the Northeast. The combination of these units is based on the work of Gardner (1974, 1977) and is thought to more accurately reflect the overall lifeway changes that are used to distinguish separate study units. The initial distinction between Paleo-Indian and Early Archaic was based primarily on changes in projectile point morphology (e.g., Coe 1964); however, Gardner's (1974, 1978; Gardner and Carbone n.d.) research has demonstrated continuity in site distributions, lithic preferences, non-projectile point tool technology, and overall adaptations. Recent research in the Delaware and Maryland Coastal Plain and Piedmont (Custer and Wallace 1982; Custer 1983a, 1983c) has shown that Gardner's observations are accurate for these areas and, therefore, may be applied to the southeastern Pennsylvania area.

The first two columns of Table 3.2 show the environmental composition during the time span of the study unit. In general, the region's environments were composed of a mosaic of grasslands, boreal and deciduous forest up to ca. 8000 BC. Climate was dominated by cold air masses associated with the Laurentide ice sheet (Carbone 1976; Ogden 1977) and was characterized by cold, wet conditions with little seasonal variability. After 8000 BC the retreat of the Laurentide ice sheet lessened its effects on Middle Atlantic weather patterns bringing about cold and dry conditions with more pronounced seasonal variation. The major effect was an expansion of boreal forests at the expense of deciduous elements and grasslands. Prior to 8000 BC the dominant game animals would have been Pleistocene megafauna including mastodon, mammoth, horse, camel, and bison, all of which have been found in Late Glacial deposits in the Lancaster-Frederick Lowlands of York and Lancaster Counties (Reich 1974; Kinsey 1977a). After 8000 BC more modern game animals, particularly white-tailed deer, would have been prevalent.

As noted earlier, mobile lifestyle was characteristic. A preponderance of hunting weapons and tools for processing the products of game animals indicates a primary emphasis on hunted resources (Griffin 1977). However, faunal and floral resources recovered from the Shawnee-Minisink Site in the Upper Delaware River Valley (Kauffman and Dent 1982) indicate the use of riverine and plant food resources as well. Gardner (1977, 1979) and Goodyear (1979) note that, given a mobile lifestyle and an emphasis on hunting, it is highly likely that a curated biface technology (Binford 1979) formed an important part of Paleo-Indian/Early Archaic adaptations. As game became available it would be necessary to have suitable tools at hand. A staged biface technology (Callahan 1979) would be flexible enough to meet the necessary contingencies, especially when executed in high quality lithic materials (Goodyear 1979). Therefore, the procurement of high quality lithic raw materials would be an important component of Paleo-Indian/Early Archaic adaptations.

Gardner (1977, 1979) has described a series of sites with varied functions used by social units of varied sizes during this period. Table 3.3 lists the varied types of sites, their characteristics, and likely locations. Table 3.4 shows the potential site occurrences in each spatial

Table 3.3: Paleo-Indian/Early Archaic Site Types

Site Type	Characteristics	Locations	Social Units
quarry	large amounts of debitage; early stage biface rejects	lithic outcrops or cobble beds	specialized work parties
quarry-reduction site	large amounts of debitage; early stage biface rejects	level ground with surface water closest to quarry	specialized work parties
quarry-related base camp	structures; wide variety of tool types; large amounts of debitage; late stage biface and projectile point rejects	stream confluences; level ground; southern exposures; 1-2 km from quarry	macro-band
base camp (non-quarry)	same as quarry-related base camp except samll amounts of debitage and few biface and projectile point rejects	stream confluences; level ground; sourhern exposure; maximum availability of game attractive locations	micro-band, possibly macro-band
base camp maintenance station	hunting and processing tools; moderate to low amounts of debitage; possible structures; discarded bifaces and projectile points	well-drained ground adjacent to swamps, bogs, sinkholes and other game attractive locations within 3 km of base camp	specialized work parties
hunting site	same as base camp maintenance station without structures; also fewer numbers of artifacts	same as base camp maintenance station except may be at any game attractive locations more than 3 km from base camps	specialized work parties

Sources: Gardner (1974, 1977, 1979); Custer (1983a)

Table 3.4: Potential Sites - Paleo-Indian/Early Archaic Study Unit

Site Types	Coastal Plain	Fall Line	Piedmont Uplands	Lancaster-Frederick Lowlands	Triassic Uplands
quarry	-	+	-	+	+
quarry-reduction site	-	+	-	+	+
quarry-related base camp	-	+	-	+	+
base camp	+	0	-	++(2)	+
base camp maintenance station	+	0	-	+	+
hunting site	++(1)	+	++(3)	++(4)	++(5)

KEY: ++ - sites likely with known examples

+ - sites likely, no known examples

0 - unknown site potential

- - sites unlikely

EXAMPLES:

(1) 7NC-D-70 (Custer, Catts, and Bachman 1982)

(2) 36LA93 (Kinsey 1977a; Bowser Collection casts, North Museum, Franklin and Marshall College)

(3) 7NC-D-13, 7NC-A-2, 36LA91, 36CH131, 36CH175, 36CH122 (Custer and Wallace 1982:151)

(4) Numerous sites (Kinsey 1958, 1959a); 36LA72 (Futer Collection - North Museum, Franklin and Marshall College)

(5) 36LA336 (Smother Collection, William Penn Memorial Museum Site Files)

division for the varied types of sites. Where known examples of sites are present, they are noted.

Some general patterns can be seen in the spatial divisions. The relative scarcity of cryptocrystalline lithic materials in the Piedmont Uplands and Coastal Plain makes the presence of quarry-related sites unlikely. However, both of these areas have extensive poorly-drained game-attractive areas that are likely locations for hunting sites. It should also be noted that test excavations within the Piedmont Uplands (Custer 1980a, 1981, n.d.a.) at a number of potential base camp locations has revealed that many of these settings were poorly drained river edge swamps and, therefore, unsuitable settlement locations. Custer and Wallace (1982: 154-158) have suggested that the Piedmont Uplands were used primarily as an area for hunting at suitable locations with small work parties making forays into the area from base camps in the Fall Line and Lancaster-Frederick Lowlands. Abundant cobble resources as well as the Delaware Chalcedony Complex (Custer and Galasso 1980) would provide the necessary resources for quarry-related sites in the Fall Line although utilization of cobble resources may entail adjustments in quarrying and manufacturing technologies and, possibly, settlement pattern systems (Custer, Cavallo, and Stewart 1983). Abundant replacement of primary jaspers and cherts of the Lancaster-Frederick Lowlands provide a focus for quarry-related sites, and extensive floodplains along the major drainages are base camp locations of high potential. Extensive sinkholes, poorly-drained margins of low-order watercourses, and ponds also provide hunting site and base camp maintenance station locations in this area. The Triassic Uplands also contain a wide array of resources likely to be associated with Paleo-Indian/Early Archaic sites in the largest numbers followed by the Triassic Uplands. The Fall Line and Coastal Plain would have some variety of sites, although their extent in unknown, but less than the areas noted above. Finally, the Piedmont Uplands would have extensive numbers of a single category of sites.

The site distributions noted above can be used to address a variety of research questions. Because Paleo-Indian/Early Archaic sites are scarce and not well known, any Paleo-Indian/Early Archaic site in the region has considerable significance. The absence of any controlled excavation of a Paleo-Indian/Early Archaic site in the region enhances these sites' importance. The major research questions that may be addressed by studying these sites include: How do the various social groups adapt to the changing environments of the Pleistocene/Holocene transition? and, Are current predictive models, such as those summarized in Table 3.4, applicable? Most importantly, basic data collection remains the major research activity for the Paleo-Indian/Early Archaic study unit.

3.2.2.3 Middle Archaic (6500 BC - 3000 BC)

The Middle Archaic study unit coincides with the onset of fully-developed Holocene climates and environments. As can be seen from Table 3.2, all subdivisions of the region would have been covered with mesic oak-hemlock forests. Climate would have been warm and very wet and many extensive ponds and poorly drained areas would have been present, particularly in areas underlain by limestone in the Lancaster-Frederick Lowlands. Also, rising sea level caused interior water tables in the Coastal Plain to rise. In some settings water tables were stranded on, or near, the surface by impermeable clays, and extensive swamps developed. The Churchmans Marsh Complex (Custer 1982a) near Wilmington, Delaware, is one example and the Tinicum Marsh complex near Philadelphia Airport on Lower Ridley Creek seems to have a similar developmental history. Throughout the region, deer would have been the dominant game animal and the spread of oak trees and an accompanying deciduous understory would have enhanced the availability of gathered resources. An additional environmental change coincident with the beginning of the Middle Archaic is the onset of sufficient seasonal variation in climate to produce seasonal variation in resource variability (Carbone 1976, 1982).

The region's archeological record for the Middle Archaic is very poor, as is true of the Middle Atlantic as a whole. Gardner (1978) has summarized some of the salient characteristics of the time period. One important characteristic is a shift in preferences of lithic materials for stone tool production. Middle Archaic groups used a much wider range of lithic materials and the quarry-focused site complexes of the Paleo-Indian/Early Archaic study unit are no longer apparent. The use of a wider range of environments is also seen, with Middle Archaic groups utilizing many locations not utilized previously. The presence of specialized plant food processing tools suggests that many of the new sites were utilized for gathering and processing of plant foods. Gardner (1978) and others (Snow 1980) suggest that these sites were utilized by mobile groups of hunters and gatherers on a seasonally varied basis. A fusion-fission social organization that adjusted population density to resource availability is also hypothesized.

Within this adaptation, three major site types are recognized and are adapted from the work of MacNeish (1971). Macro-band base camps are the living sites of large (fused) social units and occur in the most productive environmental settings. Containing large varieties of tool types, macro-band base camps are quite large and contain many artifacts. Micro-band base camps are similar to macro-band base camps except they are smaller, have fewer artifacts, are located in less productive environments, and are the living sites of the smaller (fissioned) social units. Procurement sites are the final site type noted and represent locations where specific resources were extracted and processed by specialized work parties. They are generally small and contain few artifacts and a limited number of tool types. Table 3.5 summarizes the potential locations for these site types in the study area.

Although the range of data is limited, some site distribution patterns are evident. Based on the present information, the environments of highest productivity are located in the Coastal Plain and Lancaster-Frederick lowlands. In the Coastal Plain the foci of sites are large swamps such as Churchmans Marsh (Custer 1982a), which show site distributions similar to those of other Coastal Plain swamps of the same time period (Gardner 1978; Rappleye and Gardner 1979). In the Lancaster-Frederick Lowlands, limestone areas with extensive swamps, bogs, and ponds were the foci of Middle Archaic macro-bands (Stewart 1981). Micro-band base camp locations are very difficult to predict. However, they are not expected to occur in the Piedmont Uplands because general site distributions in this area seem to be similar to Paleo-Indian/Early Archaic patterns (Custer and

Table 3.5: Potential Sites - Middle Archaic Study Unit

Site Types	Coastal Plain	Fall Line	Piedmont Uplands	Lancaster-Frederick Lowlands	Triassic Uplands
micro-band base camp	++(1)	0	-	+	0
micro-band base camp	0	0	-	+	0
Procurement site	++(3)	++(2)	++(4)	++(5)	+

KEY: ++ - sites likely with known examples

+ - sites likely, no known examples

0 - unknown site potential

- - sites unlikely

EXAMPLES:

(1) 7NC-E-6 (Custer 1982a)

(2) 7NC-D-62 (Custer, Sprinkle, Flora, and Stiner 1981)

(3) 7NC-D-70 (Custer, Catts, and Bachman 1982)

(4) 7NC-D-77, 36CH23, Granogue Site Complex (Custer and Wallace 1982:154)

(5) 36LA280, 36LA286, 36LA298 (William Penn Memorial Museum Site Files)

Wallace 1982:164). Procurement sites should be scattered in any attractive hunting and gathering locales. Hunting sites are known for this area; however, gathering sites from this period have been noted in other parts of the Middle Atlantic (Custer 1980b; Hoffman and Foss 1980; Wall 1981).

As was the case for the Paleo-Indian/Early Archaic study unit, basic descriptions of sites and assemblages are the major research concern for the Middle Archaic. Two possible research questions that might be addressed are: (1) How is scheduling of resource procurement accomplished in light of emerging seasonal variation in resources? (2) What major adjustments are made in settlement-subsistence systems as Holocene environments become fully developed?

3.2.2.4 Late Archaic, Early Woodland, and Middle Woodland (3000 BC - AD 1000)

The grouping of the Late Archaic - Middle Woodland Periods into a single unit represents a departure from traditional culture-historical schemes. However, given the emphasis on common adaptations in study unit definition, this grouping of chronological units is consistent with he aims of this review. In many ways, the situation is similar to the previously discussed Paleo-Indian/Early Archaic study unit. Traditional researchers (Kinsey 1972, 1977a; Kent et al. 1971) defined the differences among Late Archaic, Early Woodland, and Middle Woodland in terms of projectile points and ceramics rather than overall lifeways. Even though Witthoft's (1953) earlier, and more holistic, approach to the initial portions of this time span suggested adaptation overlaps among the recognized time periods, his more meaningful Transitional Period was not wholly accepted (e.g., Kinsey 1972). Recent reviews of data from Delaware (Custer 1982b, 1983a) have re-emphasized the trends noted by Willhoft and recognize the following common trends in adaptation during Late Archaic - Middle Woodland times that can be generalized to the southeastern Pennsylvania region:

1) A focus on the most predictable resources and the highest productivity settings, especially regarding surface water (Cavallo 1982; 1980c);

2) An intensified use of certain resources, especially plant foods and riverine resources (Cavallo 1982; Stewart 1982; Thomas 1981);

3) The appearance and maintenance of semi-sedentary and very large macro-band base camps in high productivity settings such as major drainage floodplains (Custer 1982a; Custer and Wallace 1982:158-159);

4) The development of durable storage and processing facilities and artifacts such as pits, platform hearths, and ceramics (Catlin, Custer, and Stewart 1982; Custer 1978);

5) An extensive use of a wide range of environments on an occasional basis so as to produce many small ephemerally-utilized sites (Custer and Wallace 1982:164-165; Custer and Galasso 1983);

6) The development and maintenance of trade and exchange networks in lithic materials, steatite, specialized artifact forms, and possibly ceramics (Snethkamp 1978; Custer 1978, n.d.b; Custer, McNamara, and Ward 1983); and

7) The appearance of incipient ranked societies with some mortuary ceremonialism and conspicuous consumption of sumptuary goods (Custer 1983a, 1982b, n.d.b).

The tendency toward more sedentary lifestyles in very productive floodplain settings with extensive, yet ephemeral, use of a variety of different environments and intensive utilization of a limited range of especially productive resources is seen as a response to the mid-postglacial xerothermic, the warm and dry interval that is correlated with the beginning of the period. During this warm, dry interval oak-hickory forests would have been found throughout the region with extensive grasslands present in low relief areas. Game animals would have been similar to the preceding period, but their distribution would be expected to differ (Custer 1978). There is extensive geomorphological evidence (Curry and Custer 1982; Custer 1978, n.d.b) for drying of interior, low-order streams, pronounced episodes of aeolian erosian and deposition, and major changes in high order stream erosion and deposition. Global paleoclimatic research (Lamb 1977) and local data (Carbone 1976, 1983; Custer 1980c) also suggests that the period between 3000 BC and 1000 BC may have been characterized by cyclical changes in moisture and temperature. Finally, post-Pleistocene sea level change would have slowed down and stabilized estuarine settings close to their modern locations (Kraft 1977) in the Susquehanna, Delaware, and their tributaries. Anadromous fish would have pushed to their maximum upstream locations. The overall effect of these changes would have been to make high order drainage floodplains and other areas of stable surface water the most attractive settlement locations. These locations would also entail the least risk, and intensified use of resources such as anadromous fish and seed plants would be likely. Technological developments such as ceramics for increased cooking efficiency and storage, multi-purpose processing tools such as broadspears, and large numbers of plant food processing tools would enhance the process of intensification of subsistence and allow the development of semi-sedentary lifestyles. With sedentism and improved diet from intesified food production, local population growth would also be expected (Catlin, Custer and Stewart 1982).

In addition to these changes in basic adaptations, changes in social organization can also be seen. As populations grew and became more sedentary, social organizations became more complex with inter-group connections and status differentiation more formalized than previously. As food production intensified and storage was utilized, a class of managers would have been needed. Trade and exchange played an important role in these developments by providing symbols of differential socials status in the form of specialized artifact styles or non-local materials (Binford 1962; Custer 1978, n.d.b). Also, exchange helped to build rights and obligations among individuals in different communities. Such ties would be especially useful in the face of climatic instability and resource stress

(Braun and Plog 1982). In summary, the large macro-band base camps of this study unit would be places where the process of evolution of more complex social organizations took place.

The Late Archaic - Middle Woodland study unit contains the largest number of sites of any study unit considered. Table 3.6 shows the potential distribution of sites in the various spatial divisions. Some of the more important examples are also noted. It should be noted that the basic site types recognized for this study unit are the same as those used for the Middle Archaic. Size and activities would vary greatly, nevertheless. Many important research questions can be investigated using data from these sites, including the following major issues: How do societies adapt to the mid-postglacial xerothermic climatic interval? What is the nature of the large semi-sedentary communities that appear in certain environmental settings during this period? How do non-egalitarian social systems arise and can they be linked to initial sedentism? How are trade and exchange systems organized?

3.2.2.5 Late Woodland AD 1000 - AD 1610

By AD 1000 a number of changes in adaptations can be seen in some parts of the study area; however, in some areas continuity can be seen. Very little cultural change is seen in the Coastal Plain, Fall Line, Piedmont Uplands, and Triassic Uplands (Custer 1983a, 1983c; Custer and Wallace 1982) and Late Woodland lifeways are similar to those of the Middle Woodland. In the Lancaster-Frederick Lowlands, pronounced changes can be noted. The introduction of cultigens, particularly maize and squash, ca. AD 1000 (Kinsey 1977a) brings about the establishment of what appear to be small farmsteads (Graybill 1973; Kent and Packard 1969). Later, fully sedentary villages based on agriculture are present (Kinsey and Graybill 1971) and recognized as part of the Shenks Ferry culture. Shenks Ferry groups seem to be organized primarily by sets of nuclear families. Warfare among neighboring groups is a possibility given the presence of stockaded villages, possible trophy skulls in burials, and mass burials with traumatic injuries (Kinsey and Graybill 1971).

By the beginning of the 16th century, the intrusion of non-local Iroquoian groups from the north becomes apparent in the Susquehanna River Valley of the Lancaster-Frederick Lowlands (Witthoft 1959). The movement of these groups is tied to population disruptions of the early Contact period and results in the disappearance of the Shenks Ferry groups (Hunter 1979). After they are established in the region, these Iroquoian groups are known as the historic Susquehannocks who played an important role in the region's Contact period. The Late Woodland groups of other portions of the study area are the proto-historic Lenape.

Table 3.7 shows the potential distribution of Late Woodland sites in the region. The differential distributions associated with the presence and absence of agriculture is apparent and the major research question for this study unit is to explain why some groups utilize agriculture and others do not.

Table 3.6: Potential Sites - Late Archaic-Middle Woodland Study Units

Site Type	Coastal Plain	Fall Line	Piedmont Uplands	Lancaster-Frederick Lowlands	Triassic Uplands
macro-band base camp	++(1)	++(3)	++(5)	++(7)	++(10)
micro-band base camp	+	++(4)	-	++(8)	+
procurement site	++(2)	0	++(6)	++(9)	++(10)

KEY: ++ - sites likely with known examples

+ - sites likely, no known examples

0 - unknown site potential

- - sites unlikely

EXAMPLES:

(1) 7NC-E-6, 7NC-E-1 (Custer 1982a)

(2) 7NC-D-70 (Custer, Catts, and Bachman 1982)

(3) 7NC-D-55 (Custer, Sprinkle, Flora, and Stiner 1981)

(4) 7NC-D-62 (Custer, Sprinkle, Flora, and Stiner 1981)

(5) 36CH51 (Custer n.d.a); 36CH5 (Wilkins 1978); 7NC-A-2, 36CH202 (Custer and Wallace 1982)

(6) Limestone Hills Complex (Custer 1980a); Avondale Landfill Complex (Custer and Wallace 1982); 36LA96 (Kinsey and Custer 1982)

(7) Bare Island (Kinsey 1959b); Three Mile Island (Smith 1977); Conowingo (McNamara 1982, 1983)

(8) Smucker and Yohn Complex (custer 1976); Willow Street Complex (Kinsey 1977b)

(9) Eckman Collection Sites (Kinsey 1977b)

(10) Smoker Collection Sites (William Penn Memorial Museum Site Files)

Table 3.7: Potential Sites - Late Woodland Study Unit

Site Type	Coastal Plain	Fall Line	Piedmont Uplands	Lancaster-Frederick Lowlands	Triassic Uplands
macro-band base camp	++(1)	0	++(4)	-	0
micro-band base camp	++(2)	0	+	-	0
procurement site	++(3)	0	+	+	0
sedentary village	-	-	-	++(5)	0

KEY: ++ - sites likely with known examples

+ - sites likely, no known examples

0 - unknown site potential

- - sites unlikely

EXAMPLES:

(1) - 7NC-E-6 (Custer 1982a)

(2) - 7NC-E-42 (Custer 1982a)

(3) - 7NC-D-75, 7NC-E-43, 7NC-E-45 (Custer and Bachman 1983)

(4) - 36CH51 (Custer n.d.a); 36CH5 (Wilkins 1978); 7NC-A-2 (Custer 1980a)

(5) - Murry Site (Kinsey and Graybill 1971)

3.2.3 Management Considerations

The listings of sites noted above can be linked to research questions within each study unit to determine site significance. As noted by Goodyear *et al.* (1978), determination of site significance is the major consideration for resource management and should be guided by a site's potential to generate data relevant to important research questions. In this paper significant sites are defined as sites most likely to produce data relevant to important research questions listed for each study unit. Table 3.8 notes all classes of sites significant in the region. Also noted is the likely presence of these sites for each spatial division along with assessments of data quality for individual classes of sites and overall spatial units.

Counts of potentially significant site classes by spatial units are noted in Table 3.8 and provide a rough guide to the archeological research potential of each spatial division. The Lancaster-Frederick Lowlands would have the highest potential, followed by the Coastal Plain and Triassic Uplands, Fall Line, and Piedmont Uplands. An additional consideration is existing destruction of sites and future stress by natural forces such as erosion and suburban and urban development. The Coastal Plain and Fall Line have the highest amount of destruction of sites and future stress by natural forces such as erosion and suburban and urban development. The Coastal Plain and Fall Line have the highest amount of destruction followed by the Lancaster-Frederick Lowlands, Piedmont Uplands, an the Triassic Uplands. In the Coastal Plain and Fall Line most stresses, past and future, are from Philadephia and its suburban development. Sod farming is the major agricultural stress in the Lancaster-Frederick Lowlands along with some minor suburban development. Stresses in the Triassic Uplands are minor and mainly agricultural.

Assessment of potentially significant sites, data quality, and future and past stresses can be used to determine sensitive areas and develop management priorities. Table 3.9 shows rankings of the spatial divisions by the criteria noted above. The composite ranking is the mean rank of the four categories and lists the spatial division, also have high priorities. Combinations of high sensitivity and poor data quality provide the highest priorities. Therefore, Tables 3.8 and 3.9 can be used to guide research priorities and review processes for the southeastern Pennsylvania region.

3.3 The European Contact/Historic Period in the Lenape Realm of Pennsylvania's Piedmont and Coastal Plain by Marshall Joseph Becker, West Chester University

3.3.1 The Contact Period

The term "Contact Period" in North American anthropology tends to imply that interval of time during which the first regular and direct interactions took place between the members of a given culture, on one hand, and Europeans as a collective group on the other hand. Contacts between native peoples and their neighbors, as well as other native populations at

Table 3.8 Management Data

Site Types	Coastal Plain	Fall Line	Piedmont Uplands	Lancaster-Fred. Lowlands	Triassic Uplands	Data Quality
Paleo-Indian/Early Archaic						
quarry*		X		X	X	poor
quarry red.* site		X		X	X	poor
quarry rel.* base camp		X		X	X	poor
base camp* main. stn.	X			X	X	poor
base camp*	X			X	X	poor
hunting* site	X	X	X	X	X	poor
Middle Archaic						
macro-band* base camp	X	X		X		poor
micro-band* base camp	X			X		poor
procurement site	X	X	X	X	X	poor
Late Archaic-Middle Woodland						
macro-band* base camp	X	X	X	X	X	good
micro-band* base camp	X	X		X	X	poor
procurement site	X		X	X	X	fair
Late Woodland						
macro-band* base camp	X		X			fair
micro-band* base camp	X		X		X	poor
procurement* site	X		X	X	X	poor
sedentary* village				X		good
Total Significant sites	12	8	7	14	12	
Data Quality	poor	poor	good	fair	fair	
Future Stress	high	high	moderate	moderate	low	
Existing Destruction	high	high	low	moderate	low	

* significant sites

Table 3.9: Spatial Division Rankings

Significance Ranking	Data Quality	Existing Destruction
Lancaster-Frederick Lowlands (high)	Coastal Plain (poor)	Coastal Plain (high)
Triassic Uplands	Fall Line	Fall Line
Coastal Plain	Lancaster-Frederick Lowlands	Lancaster-Frederick Lowlands
Piedmont Uplands (low)	Piedmont Uplands (good)	Triassic Uplands (low)

Future Stress	Composite Ranking
Coastal Plain (high)	Coastal Plain
Fall Line	Fall Line
Piedmont Uplands	Lancaster-Frederick Lowlands
Lancaster-Frederick Lowlands	Triassic Uplands
Triassic Uplands (low)	Piedmont Uplands

great distances, may be assumed to have been regular, if not extensive, far into the past. European contact appears to have amplified these traditional interactions in ways both positive (trade) and negative (warfare), paralleling in many cases the relationships between the people in question and various European groups. To focus on the interaction of the native people and the Europeans without understanding the changes in local or regional activities leads to a limited description of culture history, although one which may be more easily decoded.

The earliest "contacts" between the Lenape and Europeans were probably more through indirect exposure to European technology transmitted via other native Americans than by direct contacts with the vessels of Verrazano or Hudson, or the early Spanish mission on the Chesapeake. The extensive coastal contacts by Portuguese and other fishing peoples along the Grand Banks and other exploratory activities which we infer at this time appear to have equally limited effect. The first regular contacts appear to have taken place between 1610 and 1620 as part of the Dutch trading venture centered at Fort Amsterdam (Manhattan Island), but extending out to the east to the Connecticut River Valley, up the North (Hudson) River and down as far as the South (Delaware) River. Thus we can describe the Early Contact Period as extending back into the 15th century and characterized primarily by indirect contact and perhaps an occasional direct contact, but without any regular interaction. This period covers nearly 150 years, phasing into a Late Contact Period, about 1610 to 1640, during which interactions became regular and the economic and social situations of the Lenape made adjustments reflecting alterations in their interaction patterns with the neighboring Minquas (Susquehannock) more than those which occurred as a result of Dutch or Swedish contacts. In light of the sparse data for the early contact of the 15th and 16th centuries, the Contact/Historic Period can conveniently be subdivided into three temporal study units, including the Late Contact Period (ca. 1610-1640), the Early Historic Period (1640-1680), and the Late Historic Period (1680-1740).

3.3.2 Previous Studies: Background for Research

Much of what had been known regarding the early culture history of the Lenape area prior to 1975 did not derive from the archeology of the ethnohistory of these people, but from data relating to adjacent people, or to the relocated and somewhat changed Lenape of later times. In the Pennsylvania Coastal Plain and reaching up into the Piedmont, the richly documented Late Contact Period is just beginning to be known in detail. Prior to 1975 the Lenape were best known from the late historic period (post 1750) or from the time after which the conservative bands of these people had largely abandoned their traditional range and established settlements in the Susquehanna drainage or even further west, often adjacent to or coresident with other peoples who also had left their respective homelands (see Weslager 1978). Cultural activities of all kinds prior to 1750 were inferred by various authors (Goddard 1978; Weslager 1972) from a few documents which were commonly available and some specific texts, all oddly conjoined with data from sources in the late historic period (e.g. Heckewelder 1876). The "syntheses" may be characterized as lacking an anthropological perspective and either ignoring the gradual processes of culture change or speculating on drastic change as evidenced by specific changes in material culture or residence. The singular exception to these is the work of Newcomb (1970), which treats the data quite well, but tends to focus on the evidence for change after 1750.

Equally problematical in the interpretation of the historic evidence had been the lack of archeological data from this period as well as from the end of the Late Woodland period. This had led scholars to incorporate data from areas contiguous to the Lenape realm, such as the extensive data from the Munsee area (the Minisinks) produced by Kraft (1977, 1978). Recent excavations of historic sites (Forks of Delaware 1980; Becker Ms. A), and sites with historic components (Custer 1982a) has vastly increased our knowledge of this period, balancing the abundant historical sources.

3.3.3 Lenape Boundaries and Internal Differences

The area occupied by the Lenape at contact appears to have included all of the Delaware River drainage in southeastern Pennsylvania south of the Lehigh River. Their range extended at least as far as Duck Creek in Delaware on the south, and to the west of these areas as far as the sources of the various streams flowing into the Delaware River and bay. The area known as the "Forks of Delaware" north of the Lehigh river appears to have been a resource area open to the Lenape and other peoples, but acting as a buffer zone between actual "territories" (Becker 1983). A similar zone is postulated to have bordered the Lenape realm to the south, probably occupying about the middle third of the present State of Delaware. Ceramic evidence provided by the careful studies of Griffith (1980) appear to confirm this inference, which is based on the interpretation of various documents, including land deeds and letters concerning native peoples in the Late Contact period.

The people of southern New Jersey also are considered to have been Lenape, although not a single reference to this term applying to them has yet been revealed. Usually they are called the "Jersey Indians." Their interaction patterns shows no kinship with the Lenape of the west side of the River, and no consistent inter-marriage is apparent (Becker Ms. C). The northern most range of the Jersey Indians appears to have been close to or along the Raritan River and to near a line extending from the western reaches of the Raritan west toward present Easton, Pennsylvania, at the mouth of the Lehigh. This resource-rich area, the southern boundary of the linguistically and culturally related Munsee, may not have had (or needed) a separating buffer zone. Although the Munsee were culturally identifiable and distinct in an ethnic sense (even into the 20th century), the similarities of language and behavior may have allowed them to interact, and possibly intermarry, with the Jerseys.

At present the careful delineation of land sales and the development of an onomasticon of the native peoples in the area of the Raritan River is essential to establishing, if possible, where the Munsee and Lenape realms were divided. Quite possibly the bands of these respective cultures maintained mutually supportive roles similar to those which the various Lenape bands utilized among themselves in adjusting to resource use and population needs. I suggest that ethnographic examples of band dynamics may provide the best means by which we can infer how this pattern worked in historic and, probably, prehistoric times.

Of importance in reconstructing the relationships between the Jersey peoples and the Lenape are recent findings concerning their movements after 1680 or 1700. To a great extent some of their differences reflect Provincial laws governing land sales, but in the main the interaction patterns appear to reflect kinship and cultural affinities. In Pennsylvania after 1682, only William Penn had the right to purchase land from the native peoples, and he carefully set out to but all claims to land within his province. This began with systematic purchases of all Lenape lands on the west side of the River and later extended to lands which had belonged to the Susquehannock but were "taken by conquest in 1674 by the Seneca and their allies. Lenape rights to lands upon which they were "seated" or "settled" were guaranteed and assiduously protected. The colonial interpretation of this policy applied to Lenape lands which were fenced, cleared, or near to habitations. The loss of hunting grounds, the termination of fish runs due to dam construction, and other factors led to the departure of the Lenape, either singly or in bands, from the Delaware drainage.

In summary, the Lenape realm as it was known in the colonial period is believed to reflect that which existed prior to European contact. Disruptions and even invasion by the Minquas (Susquehannock) occurred at a time so recent in Lenape tradition as to have no effect on the understanding of the collective Lenape as to what lands actually were part of their realm.

3.3.4 Late Contact Period (ca. 1600 - 1640): Transition to Historic

Lenape activities at this time were most strongly influenced by relations with the Minquas, who occupied the central Susquehanna drainage and had become a powerful population as a result of their control of the fur trade throughout much of what is modern Pennsylvania. Contacts with the developing Dutch trading empire intensified during the early part of this period, but Minquas' trade may have been divided between the Chesapeake and the North River until about 1622. The Powhatan uprising probably led the Minquas to seek a shorter and safer route to trading contacts, leading to the establishment of a portage of the upper reaches of the Schuylkill. The early establishment of Fort Nassau across from the mouth of the Schuylkill suggests the presence of this trading route, plus the prudence of the Dutch in placing a river between their outpost and the visiting Minquas.

Each of the Lenape bands prior to this period is assumed to have occupied the drainage of a major tributary of the Delaware (and perhaps Schuylkill) River. Their summer stations were near the mouths of their respective streams, where they could utilize anadromous fish, migratory fowl, shellfish, and swamp resources in addition to bottom lands or silt banks on which the women could produce corn, beans and squash. The winter months were spent in a dispersed foraging pattern with nuclear families scattering throughout the forest to utilize deer and sparse resources, which were minimally supplemented by stored foodstuffs.

The Minquas invasion of southeastern Pennsylvania, although primarily in search of an effective trade route, led to hostilities which largely cleared the Lenape from the west side of the Delaware (Myers 1912, passim). The effects of this activity must have led to large numbers of Lenape taking refuge in the Jerseys, and possibly in areas formerly serving as buffer areas. By the time that the Swedes had established Fortress Christina in 1638 at Hopokahocking (present Wilmington), some balance may have been achieved between Lenape and Minquas. However, both ethnographic interpretations and archeological findings from the period 1610-1660, and probably later, must consider that the Minquas were present, if not dominant, in this region of southeastern Pennsylvania.

During this period we presume that the material culture changed very rapidly. At the beginning the Lenape may have had a few brass items and beads, and also some iron tools possibly cut from axes and other European made items. However, native tools of bone and stone must have predominated. By 1640 guns must have become common, iron tools (axes and knives) had largely replaced stone, and steel needles and awls had replaced bone tools. Bone and shell ornaments, together with quillwork decoration, must have continued, but bead ornaments, particularly as decoration on imported cloth or clothing, had greatly augmented native decoration. Wampum, a commercially generated medium with ceremonial value as well as a use as currency (Becker 1979), had probably developed by 1600, and by 1640 was an important status symbol all along the coast from Delaware Bay to Canada.

By 1640 most native items of stone had been replaced by metal tools and guns had generally supplanted bows and arrows. Cloth was more commonly used than hide for clothes, and ornamentation was largely of European made beads and domestic wampum. However, these alterations or additions to native material culture did not have any significant effect on the structure of Lenape society and the normal rules of the social order. This is clear from the evidence of the 18th century in which we find traditional values largely unchanged despite the even greater use of European material culture.

3.3.5 Early Historic Period (1640-1680§0

The establishment of European trading stations appears to have been targeted toward open spaces created by the native use of riverside areas for summer encampments. These "Indian fields" provided land already cleared of the substantial forest which covered the majority of the valley. Trading posts, however, required much less land than that required by settlers. In each case, however, newcomers (like their leaders Printz, Penn, etc.) sought out land already cleared, and thus in preferred areas of native habitation.

The Swedes, accustomed to using forested lands and perhaps still practicing swidden (from the Norse "to burn") cultivation, made relatively little impact on local resources and therefore minimally disturbed and local people. The ethnographic description written by Johann Campanius, the cleric providing religious counsel to the early swedish colony (see Campanius Holm 1834), appears to reflect Lenape lifestyle about the year 1640 quite directly. This and other documents from after 1640 suggest that many Lenape had returned to the west side of the river. The observations of

Peter Lindestrom (1925), made in the 1654-5 period, supposedly discuss Lenape life. Since he includes as Lenape information on mortuary programs which clearly are those of the Minquas (cf. Becker ms. E) one must question all of these data. The translation of the Johann Rising journals is not yet available. One also must question the cultural origins of the artifacts from the Delaware River now preserved in Skokloster, Sweden. Although these are assumed to be Lenape in origin, they may well be items secured from Minquas living on the Delaware River during this time (cf. Becker 1980a).

Other evidence, including early land sales by Lenape which have Minquas "co-signers," reflects the presence and the power of the Minquas at the beginning of the historic period. The documentation from this period is extensive, and now appears to have been only slightly used, largely due to limited searching for original manuscripts. Recent publication of early English and Dutch colony-related manuscripts (Gehring 1981a, b) provides abundant evidence complementing that which had been published previously (Johnson 1911; O'Callaghan 1850; Fernow 1877; Jameson 1909) as well as the data found in the various published archives of the states of Pennsylvania, New Jersey and Maryland. A few notable discoveries of documents in the 1950's pertaining to this phase of colonial history demonstrate the value of searching the unpublished archival collections (Dunlop and Weslager 1958; Weslager 1958). The archives hold an enormous quantity of information, particularly in the native land sale documents, which need to be culled in a systematic fashion. Not only can life histories of specific Lenape be generated from these records, but population movements and status changes can be elicited. Scrupulous adherence to land rights on the part of these natives, for the most part, enables us to reconstruct territorial claims and kin group affiliations, although these projects are yet in the developmental stages (Becker ms. D, E). These follow the outstanding examples of research pioneered by William A. Hunter (1974, 1978), and now continuing in various collaborative projects.

The Lenape in 1640 clearly were subordinated to the Minquas, but over the following 20 years the political and military evolution of the European colonies acted as a check to Minquas power. The growing Maryland colony to the south and Seneca incursions from the north, which in combination (1674) were to terminate Minquas power forever, had begun to alter the political alliances in the Lenape realm by the 1650's. The Minquas were forced to spend more time defending their own territory and integrity, leaving less effort available for sustaining a dangerous presence along the Delaware. After 1660 the Minquas appear to have been largely gone from daily life on the Delaware. The Lenape were both independent in their own homeland as well as allied with the Minquas in a political turn-around which demonstrated their keen perception of events involving colonial power and expansion.

In the period from 1660-1664 the Lenape appear to have been concentrated in a single area around the flatlands of Passyunk, an area now within southern Philadelphia. This clustered settlement is suggested by repeated references by the Dutch officials further down the river to the chiefs at Passyunk, and by absence of any reference to other Lenape groups or settlements on the western banks of the river at that time. The local Lenape, as well as the Swedish settlers at Passyunk, who had lost military and political power in 1655, both were treated in much the same manner by the Dutch authorities. Quite possibly the Lenape had found good reason to concentrate their settlement pattern during this period and to intensify horticultural activity. Maize appears to have been an important crop from the Dutch point of view, since the Dutch settlers could not grow enough to feed their colony and were continually seeking to purchase food from their neighbors up the river. This led William Beeckman to make frequent requests for the fine Oznaburgh linen and distilled beverages much in demand by the Lenape, specifically to be used to trade for maize.

We do not know, at present, if the Lenape really were concentrating their west bank settlement during this epoch and, if so, whether it was as a defensive measure against Seneca raids or as a reflection of cash cropping. Quite possibly this period among the Lenape parallels that suggested by Ceci (1977) for the peoples in the area of Fort Amsterdam in the early 1600's. That is to say that the native population altered settlement pattern to a more sedentary and concentrated form as a response to the commensual relationships developed with Europeans. This also led to an increased population, with increased susceptibility to urban diseases. The evidence from the Lenape are also supports the thesis that native populations, long in contact with Europeans, acutally increased during the 17th century. Such increases generated greater competition for resources with increasing European populations. The stress generated by diminished resources, plus the effect of urban-oriented diseases on newly clustered native settlements may have led to the sporadic and quite localized (in time and space) epidemics that devastated specific native communities. These problems, not significantly distinct from the epidemics which swept early colonial villages, have led some scholars to infer a vast pre-contact native population despite the ecological (carrying capacity) and archeological (site distribution and form) evidence to the contrary.

The stresses on the Lenape after the end of the Dutch rule on the Delaware (1664) appear to have been reduced through a return to a dispersed settlement pattern. At present it is thought that the Lenape in 1664 may have lost the economic benefits of trade with the Dutch, but resisted the absorbtion of their territory by the Maryland colonists and the Seneca together with the Seneca allies among the Five Nations. During the next 10 years the Minquas attempted to maintain alliances with the Maryland colonists and maneuvered to fend of the Seneca. The Lenape provided military support, but their role in the final campaign which dispersed the Minquas is not known. In 1674 an alliance of Seneca and Marylanders succeeded in destroying the peripheral Minquas forts as well as their principal "Castle" on the Susquehanna. The dispersed remnants of Minquas included one group which appears to have settled, at least briefly, on the Delaware River among the Lenape, while other Minquas accepted Five Nations protection, and still other Minquas went south to the area once occupied by the Piscataway.

For the Lenape, living immediately to the east of the Minquas, this defeat left open a vast area for Lenape use as well as access to the middle merchant role in the fur trade which had been occupied by Minquas. Lenape individuals, if not groups, appear to have moved permanently into the Susquehanna region along with representatives of several other cultures as early as the 1690's if not before. Over the following years this region along the Susquehanna River became an important refuge zone for displaced groups, particularly those whom the Five Nations wanted to settle there in order to fill a relatively open area and thereby to act as a barrier against colonial expansion along the southern flank of the Five Nations.

During the period from 1640 to 1680, nearly all for the basic tools of stone used by the Lenape were replaced by metal. Few Lenape-made goods are noted in all situations described in the documents, and the inventories of Europeans made items which are given in exchange for land increase in variety to include such things as scissors and shoes. The rarity of European coins or wampum being used in land purchases or other business negotiations, and the resistence by the Lenape (as well as other natives) to the use of silver ornaments attests to their cultural integrity and resistence to incorporating these items having strong socio-economic connotations among the Europeans (Becker Ms. B).

3.3.6 Late Historic Period (1680-1740)

By the time that English settlement began to grow rapidly (1680) and William Penn arrived (1682) the Lenape appear to have operated with the settlement system of one extended family band per feeder river. The specific bands have not yet been identified back to the early Dutch and Swedish period. Such an identification might help to determine if an old pattern was re-emerging after the clustering postulated for the 1660's or if there was any continuity of the bands known from the early contact period. Regardless of the history of these groups they appear to have made a similar response to Penn's request to purchase their lands. Between 1682 and 1696 Penn and his agents systematically purchased all Lenape land rights on the west bank of the Delaware and confirmer these sales by later treaties extended up to 1737.

During the period from about 1730 and 1760 Lenape settlements such as those around Tulpehocken, Swatara, and possibly Kutztown, generated some references in the historic literature, but the archeological sites remain as elusive as all the others produced by Lenape habitation. References to these sites appear in county histories and are embedded in local oral tradition, but the precise locations remain unknown.

Individuals from these intact groups of Lenape continued to leave their kin groups and join the colonial society, acculturating in various ways which have been described elsewhere. This process of leaving native society for one or another reason and blending into the complex society began with the earliest contact and continues to this day. Large numbers of Lenape sites during this period (1730-1760) are known, but from cemetery areas only. Guns are not known from any Lenape burials although they were common among the Minquas up to 1674 and certainly were owned by Lenape. The inventories of goods received by the Lenape for land indicate adequate resources, and suggest that clothing design and native decoration were the only means by which a Lenape could be distinguished from a rural farmer. By 1725-1735 the use of silver ornaments by the Lenape can be documented. This appears to be a clear marker of culture change, and one which continues to serve as an indicator of the degree to which some of these people had acculturated. The receipt of bounty money also appears to show the extent to which individuals operated withing the colonial cash economy.

For the Lenape people who sought to maintain their cultural integrity by moving west, life on the frontier (and the succession of their frontiers over the next 200 years) rewarded their efforts. From 1680 to 1880 or beyond these Lenape maintained their language and cultural identity as represented by both explicit aspects of traditional life (dress, design, ritual) and the implicit values and mores of the Lenape. Although recently these patterns have been declining at an unprecedented rate their integrity through time has been most impressive. Therefore, we should be able to identify the Lenape in archeological contexts in the historic period far beyond their ancient borders just as we could expect to distinguish between Minquas and Lenape sites in the Delaware Valley during the middle 1600's.

During this period the Lenape developed a difference political organization from the egalitarian system which had served them and began to identify themselves as Delaware. The Lenape towns of the 1700's (Kent, et al. 1981) should be distinguishable from the settlements of other cultures, but at present we cannot identify characteristic traits except for those related to mortuary activities.

3.3.7 Archeological Prospects

Prior to 1980 so little was known about the archaeology of the Lower Delaware River (Gruber 1957, Becker 1980b) that the establishment of priorities and the delineation of problems was conducted on a largely random basis. By 1980, however, considerable effort in the adjacent State of Delaware had helped bring into focus many concerns which previously remained untouched. The archeological results from Late Woodland sites plus insights from ethnohistoric studies suggest a number of directions for future research.

The problem of the Minquas occupation on the west side of the Delaware leads to renewed concern for the potential of the Printzhof Site (Becker 1978a). This early (1643) Swedish site clearly was established over an earlier Lenape site, as suggested by mortuary evidence. However, the mixed native-colonial deposits may include items of Minquas origin, if not both Lenape and Minquas. The configuration of Minquas outposts is not known at present, and comparative studies in minor Minquas (Susquehannock) sites will be needed before we can be more certain as to the identity of some of the sites from the period 1620-1660, and perhaps later.

Although we have William Penn's description of a Lenape wigwam and his account of Tenoughan's sweat bath in 1684, which includes a statement relating the position of the bath to his house and to the river (in Myers 1970: 49-51) we have yet to find the remains of a single Lenape structure. Penn certainly indicated that they were small in size, and we infer that the frameworks may have left only the most superficial evidence. We know the specific locations of several later Lenape burial areas, and the documents (and negative archeological evidence) suggest that residential areas were as much as 200 meters removed from mortuary locations (Becker ms. A, E). Custer's (1982a) recent excavations may have tested former habitation areas, but the evidence, for actual construction continues to be elusive. All of the evidence from the earliest contacts well into the twentieth century, however, indicates that the Lenape did not cluster their residences, but tended to scatter them in more or less contiguous fashion along the waterways of interest or use to the group. This dispersed pattern plus the apparent small size (and probably minimal effort involved in construction) lead one to believe that the actual identification of a Lenape "house" may be a difficult chore.

3.3.8 Management Considerations

Despite the extensive urban and suburban sprawl throughout the lower Delaware Valley, Lenape sites most certainly survive throughout the area. Numerous sites must remain along the Delaware, either in the swamps of Passyunk or under vast land fill and debris from river dredging operations (Cee Jay Frederick Associates and John Milner Associates 1981). Shackamaxon and Passyunk, the locations of two often-noted sites in the area of modern Philadelphia, are less likely to have survived than Sipaessing, near Pennsbury, where ephemeral evidence of aboriginal occupation has been reported (Becker 1978b; Cushman and Roberts 1981). However, since neither Shackamaxon nor Passyunk have been investigated archeologically, their potential for survival at present is purely speculative. The later sites, dating from after 1600, were increasingly distant from the Delaware River and they must survive in great numbers. These sites are subject to continual threat from several sources, including vandalism, deep plowing, and land contouring.

All of these situations require that we identify the sites and our research goals, and formulate a strategy for conserving these resources. In general we may place all of the problems from the Contact/Historic Period into two general categories: a) the phenomenon of culture contact and the resulting patterns of stability or change, much of what can be better documented by archeology than history, and b) the description of culture and cultural processes of change through time by "normal" processes. Some problems may be suggested, as follows:

1. What were the Lenape subsistence and settlement patterns in the period 1500-1600?

2. Did the Lenape and the Jersey "Lenape" differ during the period 1500-1600?

3. What was the extent of Lenape territory in 1500, and how was this altered by the Susquehannock (Minquas) intrusion ca. 1600?

4. Did the resurgance of Lenape power ca. 1660 and their new alliance with the Minquas correlate with a period of aggregation of bands?

5. At present Lenape culture seems to have been remarkable stable prior (and possibly after) 1740. Other sites need to be located and excavated to determine a) the degree of cultural homogeneity between bands, and b) the rate of culture change through time as it occurred among the conservative and intact bands. More basic information is needed before we can begin to establish excavation priorities.

6. Now that we can document through the literature the variations in responses made by different Lenape bands to Colonial expansion, we need additional documentation of the variations over the entire range of bands.

7. Data on the shifts in residence areas made by various groups/bands during the period 1730-1760 would help us to understand if these changes were made on the part of intact bands or if a random dispersion and reaggregation was creating sites such as the Wapwallopin Site. These shifts seem to be from the Delaware River drainage to that of the Susquehanna.

8. Data on mortuary patterns suggest that cultural integrity was little affected by European contact and by later co-residence with non-Lenape people. The extent to which the Lenape were actually commingled with other peoples along the frontier or resident in the vicinity of other peoples has not been determined.

9. Vast amounts of archival data in this country remain untouched, and similar volumes appear to remain unrecognized in Sweden, Netherlands, England, and probably in Spain.

These non-renewable resources stand in greater danger of destruction over the next ten years than they have in the past 200 years. Although many of these sites may be considered similar in various ways, the data suggest that there were vast differences in the post-contact responses which may reflect differences that existed before contact with Europeans. In both periods we should have a sample of site reports to consider before deciding how valuable each site may be. At this time I believe that each site needs to be identified and tested. I would give greatest priority to two sites which are known in the literature (Okehocking and the Big Bend in the Brandywine - Becker 1980b) but neither have been located nor have we reports suggesting that they have been looted. Both remain in open countryside (farmland), but this kind of land is vanishing at an extremely rapid rate. The present owners of these areas are most cooperative and very well educated, and would permit extensive survey and testing which may be necessary for locating these sites. The next generation of owners almost certainly will divide the land and subject it to real estate development. For this reason I believe that archeological efforts should be directed toward the location and excavation of these two sites before all others in the area, with the exception of sites which may be discovered through accident and stand in immediate danger of destruction.

3.4 Historic Archeological Resources of Pennsylvania's Piedmont and Coastal Plain by Betty J. Cosans, John Milner Associates, Inc.

3.4.1 Introduction

This section presents a discussion of the archeological resources associated with the historic occupation of southeastern Pennsylvania. Emphasis is on the definition of a series of study units that explain the known variability of extent sites, a definition which can be utilized in the evaluation of stresses and the development of effective management strategies. Three conceptual frameworks, comprising temporal, thematic, and demographic variables, are employed in the definition of study units, although only the first two variables are actually assigned study unit status. The approach to the definition of the temporal, thematic, and demographic variables as the basis for the study units reflects an ecological view of culture as a series of adaptations to the environment and, especially, the concept of ecological niches in which various groups may perceive and utilize the same environment in totally different ways.

The data base consists of those historic sites that have been listed in state and federal inventories (PHMC 1973, U. S. Dept. of the Interior 1977), and those sites whose presence can be inferred from historical information. The data base also includes information derived from historic archeological excavations undertaken primarily in urban contexts in the Coastal Plain.

3.4.2 Historical Background

The 17th century Swedish settlers in southeastern Pennsylvania gravitated toward riverine sites already partially cleared by Indians, and rarely penetrated inland above the fall line. By 1650, Swedish settlements were scattered along the Delaware River, the lower Schuylkill River, and the major creeks below Philadelphia. These early settlers preferred to occupy scattered farmsteads with virtually no clusters of town or village development. Chester (Delaware County) was the only village center in Pennsylvania until 1682. Road development was rudimentary with Indian trails and natural waterways providing the major arteries of transportation (Ashmead 1884).

In 1654, the Dutch assumed control of the Swedish settlements on the Delaware River, but chose to concentrate on the development of their settlements in Delaware and ignored the Swedish settlements in Pennsylvania. A decade later, the English assumed control over the Dutch colonies in North America and, within a few years, English settlers appeared in southeastern Pennsylvania, locating among the Swedes at Chester and at scattered sites along the Delaware River in Philadelphia and Bucks County. Like the Swedes, these early English settlers located along the river and rarely penetrated inland above the fall line. In 1677, the English established settlements on the east side of the Delaware at Gloucester and Burlington (Wacker 1975) and at Crewcorne in Bucks County on the west side of the river (Bucks County Conservancy 1979).

In 1681 William Penn was granted a proprietary charter to land on the west side of the Delaware River and, the following year, the first company of Quaker settlers arrived in Pennsylvania. The settlement of Pennsylvania was rapid and comparatively well organized. By 1637 (Holme 1687), all of the land within 25 miles of the Delaware River had been laid out in rectilinear parcels ranging in size from a few hundred acres to more than 10,000 acres. Most of the land had been granted to various individuals or companies of settlers at this time, but it is uncertain exactly how many of these original tracts of land were actually taken up and developed. There appears to have been no consistent pattern to the method of settlement. Some individuals settled the land themselves, others sent agents or servants to take up their land in Pennsylvania, while still others chose to remain in Philadelphia selling or letting their country land on ground rents. Existing Swedish and English land titles were recognized by Penn, and the Swedes were rapidly assimilated into the Anglo-Colonial community. The rough outlines of early community development are discernible in the Holme Map of 1687, which shows early county and township divisions as well as three planned community sites.

Community development in colonial Pennsylvania was both planned and unplanned. Penn's grid plan for Philadelphia stands among the most successful of the colonial planned communities. Less successful were two planned towns in Bucks County which consisted of a square commons surrounded by long, narrow wedge-shaped lots. Chester was already an established community when Penn arrived in Pennsylvania and Germantown rapidly developed as a ribbon community along Germantown Avenue, one of the first roads in Pennsylvania (Watson 1905). The most pervasive basis for 17th century community development was undoubtedly the long tradition of community life which English settlers brought to the colonial experience. Unlike the Swedes, English Quakers exhibited a decided preference for organized community life as reflected by both the formally determined pattern of civil subdivisions (counties, townships, boroughs, and cities) and the development of numerous unincorporated villages and hamlets.

By 1700, the settled area of Pennsylvania corresponded to the surveyed area shown on the Holme Plan (1687). By 1720, the area of settlement extended to the Susquehanna River and by 1740 the entire Piedmont had been settled, although many areas remained sparsely populated throughout the 18th century. At the close of the Colonial Period, Philadelphia was the second largest city in the British Empire, an important center for international trade, and the economic, social, and political center of southeastern Pennsylvania (Scharf and Wescott 1884). Important, regional town centers included Bristol, Chester, Lancaster, and York. Despite the rapid urbanization of Philadelphia and the adjacent communities along the Delaware River, most of the Piedmont remained rural throughout the 18th century. Agriculture was the major economic activity of the region, with the majority of non-city dwellers settled on independent farmsteads. Owner occupancy was common and most farmsteads were readily accessible to nearby villages, county seats, and Philadelphia by way of a network of public roads, bridges, and ferries. The colonial road pattern is still a dominant characteristic of arterial road patterns in southeastern Pennsylvania.

During the 18th century, heavy industry tended to be a rural rather than an urban phenomenon, with environmental factors playing an important role in determining where various industries located. The milling industry was tied to the Piedmont streams where waterpower was readily available, while the iron industry required not only water power but access to raw materials and extensive timber resources. Iron forges were scattered throughout the Piedmont, but iron furnaces tended to cluster along the northern and western perimeter of the region and generally included a self-contained community of workers and managers (Pennsylvania Society of the Colonial Dames 1914).

Unincorporated community settlements usually clustered around specific focal points such as mills, taverns, stores, fording places, bridges, ferry landings, crossroads, churches, meeting houses, or county court houses. Many of these early community clusters were unplanned and exhibited an irregular plan conforming to the dominant features of the natural or cultural environment. However, beginning in the mid-18th century and continuing in the 19th century, a large number of embryonic planned communities were laid out as speculative enterprises. These real estate developments were especially common in the less densely populated areas of Lancaster and York Counties (Franklin and Evans 1883, Gibson 1886). A few of these communities were extremely successful, but most were either marginally successful or failed completely and were abandoned. These speculative ventures can usually be recognized by their rectilinear street plan, the uniform size of lot divisions, and the planned allocation of space to churches, schools, and other public buildings.

The American Revolution had relatively little lasting impact on the material aspects of the various communities and rural neighborhoods where battles, encampments, and political events took place. In general, the significant events of the Revolution represent tightly dated contexts in existing sites of communities.

After the Revolution, the boundaries of settlement rapidly pushed westward beyond the Piedmont, with communities such as Lancaster and York serving as staging areas for westward migration. Road building and canal construction were undertaken, linking southeastern Pennsylvania in a transportation system that reached from Baltimore to New York and westward to Pittsburgh. During the late 18th and early 19th centuries, canal locks and turnpike tollgates also served as focal points for community development. About 1800, unincorporated villages and hamlets were often assigned post offices. In many instances, success in obtaining a post office was a critical factor in determining whether an 18th century community flourished or declined in the 19th century. During the mid-19th century, railroads became focal points for community development, with the fortunes of an existing town or the nucleus of a few town predicated on corporate decisions regarding the establishments of railroad stations, freight depots, and repair yards. However, the major factor affecting the demographic patterns of southeastern Pennsylvania in the mid-19th century was the discovery of the Pennsylvania coal fields and technological innovation of steam power. The introduction of steam power freed mills, factories, and forges form the necessity of locating near a source of water power and permitted heavy industry to locate virtually anywhere. As a result, heavy industry became an urban phenomenon concentrated in the Coastal Plain along the Delaware River peripheral to Philadelphia, with small pockets of industrial development emerging throughout the region.

Wherever mid-19th century industrial development occurred, communities encroached on the surrounding countryside, generating a cultural dichotomy with far-reaching social, political, and economic ramifications. In general, the pre-industrial pattern of townships and villages can still be discerned in the western part of the Piedmont, while the major effects of industrialization were felt in the highly urban sections of the Coastal Plain. The explosive expansion of Philadelphia after 1830 led to city-county consolidation in 1854. At this time, 28 independent townships, boroughs and districts were eliminated (Daly and Weinberg 1966).

During the early 20th century, another technological innovation, the automobile, radically altered settlement patterns in southeastern Pennsylvania. Just as the introduction of steam power freed the factory from the necessity of locating near a source of water power, the automobile freed the work force from the necessity of living in close proximity to their place of employment. This new mobility gave rise to the urban exodus and the development of the so-called bedroom communities peripheral to industrial and commercial centers. Suburban development generally occurred within the parameters of the existing township-village pattern, preserving historic place names and boundaries while drastically altering the content of town life. Since 1950, the urban exodus has shifted from individuals to commerce and industry with new centers of business locating outside the city in planned malls and industrial parks (Oberman and Kozahowski 1976). As a result, many older urban industrial and commercial centers are rapidly becoming areas of marginal land use.

3.4.3 Temporal Study Units

Six major temporal study units can be defined which reflect specific events marking the historic development of southeastern Pennsylvania discussed above. In many respects, chronological divisions are the least satisfactory of the study units and are most effectively applied in conjunction with the thematic and demographic study units or in the contest of broadly defined styles in architectural design (Blumenson 1977; Cee Jay Frederick Associates and John Milner Associates 1981).

3.4.3.1 Period of Initial Settlement (ca. 1638-1682)

Relatively few standing buildings have survived from the period of initial settlement and only one site (Printzhof) has been verified by archeological investigation (Becker 1977). To a large extent, our knowledge of this period is based almost entirely on historical evidence. Although the location of a number of early 17th century sites can be predicted from historical documents, the probability of recovering resources associated with this period of development is slight given the intensive urban and industrial development which has marked the development of the Coastal Plain since 1682.

3.4.3.2 Anglo-Colonial Period (1682-1782)

The Anglo-Colonial period is represented by both standing buildings located throughout southeastern Pennsylvania and an extensive archeological data base oriented to Philadelphia. The Georgian period of architecture is well represented in public buildings, churches, meeting houses, and dwellings with a less favorable survival rate for log houses, barns, sheds, wharves, ferry landings, craft shops, and other utilitarian structures. In general, the probability of archeological resources from the colonial period surviving *in situ* is greater for sites where historic buildings are still standing, where minimal redevelopment can be ascertained from either historical evidence or on-site inspection, and where sites were abandoned once they outlived their 18th century function.

3.4.3.3 Federal Period (1782-1820)

The Federal Period is also represented by both standing buildings situated throughout southeastern Pennsylvania and an extensive urban-oriented archeological data base. The Federal style in architecture flourished alongside the earlier Georgian style in both residences and public buildings. During this period, many colonial sites were redeveloped especially in the older neighborhoods of Philadelphia and environs. The factors affecting the survival of sites from the Federal Period are similar to those identified for colonial sites.

3.4.3.4 Early Victorian Period (1820-1865)

The Early Victorian Period is represented by a large number of standing buildings, but it has only recently become the object of extensive archeological interest. The mid-19th century was a period of transition and change in virtually every aspect of life in southeastern Pennsylvania, resulting in extensive alterations to the environment and to the way in which man interacted with both the physical and cultural environment. This was the period of canal and railroad building, the emergence of the factory as the principal place of employment for many Pennsylvanians, and the beginning of more than a century of urban encroachment on rural neighborhoods and small communities. Architecture reflected numerous influences, including Classical, Gothic and Egyptian Revivals, while a preponderance of vernacular structures appeared to house activities connected with industry, canals, and railroads. The probability of survival for Early Victorian resources is comparatively good. In many older neighborhoods and communities a large part of the built environment may date to this period, preserving not only *in situ* resources but also the community setting relevant to the resources in question. Conversely, the developments of this period frequently destroyed or severely disturbed evidence of earlier periods of historic occupation.

3.4.3.5 Late Victorian Period (1865-1900)

The Late Victorian Period is also represented by a large number of standing buildings, but a relatively small archeological data base except in the specialized area of industrial archeology. Like the preceeding period, the Late Victorian Period was characterized by industrial development and the encroachment of urban development into heretofore rural or lightly developed areas peripheral to the city. Innovations during this period included the introduction of the telephone, commercial electricity, and urban mass transit. Architecture continued to show the influence of revival styles of European origin with the emergence of an indigenous American style. Many vernacular buildings from this period have also survived intact, including a variety of urban commercial and residential buildings, industrial buildings, and farm buildings. The Centennial Exhibition held at Philadelphia in 1876 provided the initial stimulus for the preservation ethic, awakening interest in the colonial past an encouraging the rescue of colonial buildings that might have otherwise been destroyed.

3.4.3.6 Early Modern Period (1900-1930)

The Early Modern Period is represented by a large number of standing buildings, few of which appear on any inventory listing. This period has only recently come to the attention of the architectural historian and has no extant archeological data base. In general, this aspect of the historic environment is considered in terms of its negative impact on the resources of earlier periods and is seldom considered as a resource in its own right. Objections have been raised to the study of the material culture of this period, given the extensive data base available in photographs, radio and movie archives, contemporary informants, printed material and historical records.

3.4.4 Thematic Study Units

Seven thematic study units are identified as representing the ways in which historic populations in southeastern Pennsylvania have accommodated basic human needs for food, shelter, work, family life, religion, community life, recreation, communication, education and defense. In each case, these thematic study units allow the identification of specific kinds of resources that can be anticipated as major elements of the archeological data base.

3.4.4.1 Mercantilism and Commerce

Commerce has been an important element of the economy of southeastern Pennsylvania since the period of initial settlement when both the Dutch and the Swedes established trading posts on the lower Delaware River. Although commercial activities have undergone substantial changes in the last 300 years, the process of change has been cumulative, with older features retained long after the introduction of innovations in merchandising and methods of doing business. For example, general stores were important elements of the mercantile system throughout southeastern Pennsylvania in the 18th and 19th centuries, but are currently found only in predominately rural areas of the western and northern portions of the Piedmont.

During the Colonial Period business ventures were generally small by modern standards. Merchants generally engaged in a wide variety of activities that might include wholesale and retail merchandising, foreign trade, coastal and local river trading, ship building, the Indian trade, insurance underwriting (marine insurance), and investment in various industrial undertakings. In large towns such as Philadelphia, Lancaster, and York, markets were organized and regulated for the distribution of food and other perishables. Shopkeepers were the principal retailers for most of the region.

During the late 18th and early 19th century business operated on a larger scale than colonial enterprise but changed little in form or content. Specialization became more common and merchants began to organize exchanges and banking houses to handle financial transactions. During the second half of the 19th century new merchandising techniques were introduced, including department stores and mail order houses. The department store was an urban phenomenon and remained so until the last 20-30 years with the development of suburban shopping malls. The mail order houses (such as Sears Roebuck and Montgomery Ward) were especially important because they reached even the most remote rural areas with modern goods and the latest styles.

3.4.4.2 Agriculture

Self-sufficient family farms characterized agriculture in southeastern Pennsylvania during the period before 1850 (Fletcher 1950). Farms were tilled by hand and farms tools were made locally. Philadelphia initially provided the major market for the farm products of southeastern Pennsylvania. However, after 1760, farm products from the western part of the Piedmont, especially grain, were also shipped to Baltimore, Maryland. During this period, many town, village and urban households also produced at least some of their own food. Town and village dwellers often cultivated part of their town lots as kitchen gardens and small orchards while keeping cows, pigs, and chickens for household use. Even urban dwellers often kept cows and pigs for their own use, although keeping pigs in the city was against the law.

After 1850, farmers in southeastern Pennsylvania began to specialize in truck gardens and dairyherds rather than grain production. Technological innovations in food processing and preservation altered consumption patterns among both urban and rural residents. Farm technology improved with the development of mass-produced plows, reapers, and threshers but farm animals continued to provide the basic motive power on the average farm. Advances were also made in selective breeding, the improvement of plant varieties, and soil conservation. Farm technology continued to become more specialized during the 20th century as the tractor replaced horses and oxen. Extension services provided farmers with access to scientific methods of husbandry, pest control and sanitation. Suburban development frequently encroached on agricultural neighborhoods and both the number of farms and farmers in southeastern Pennsylvania have been decreasing for nearly half a century.

Because of extensive demographic changes in southeastern Pennsylvania, agricultural sites or agricultural components other than farm houses are relatively rare in the urban and suburban areas of the Coastal Plain and eastern Piedmont. Sites representative of this study unit are more common in the rural areas of the northern and western Piedmont where many agricultural sites are still working farms.

3.4.4.3 Private and Public Institutions

Private institutions have existed in Pennsylvania from the period of initial settlement with establishment of a church by the Swedish settlers in 1638. Churches were generally the first institutions organized in most frontier communities and the progression of settlement westward across the Piedmont can generally be indexed by the various dates at which religious institutions were founded. During the 18th century, churches were not only places of worship, but also assumed responsibility for most education and social service activities in communities outside Philadelphia. At the same time, secular and public institutions emerged in the city to assume responsibility for various social services, including the first American hospital, an alms house, a public library, a volunteer fire company, and a college.

During the 19th century, specialized secular social services developed to handle most human emergencies, while public schools were established to meet the educational needs of all children. By the mid-19th century, social and educational institutions of a secular nature were available in most communities.

Centers of civil authority such as jails and court houses have existed as public institutions since the late 17th century. Throughout the 18th century, Philadelphia was the capital of Pennsylvania and after 1776 served as the federal capital as well. In the 1790's the federal capital was moved to New York, and in the early 19th century the state capital was moved to Harrisburg. The construction of township buildings, borough halls, and city halls to accommodate local governments was a phenomenon of the late 18th and early 19th century.

3.4.4.4 Transportation

Boats and ships have provided a major means of transportation since the period of initial settlement while ferries were a critical link in the colonial road system. An extensive road system was developed throughout southeastern Pennsylvania before the Revolution.

Turnpikes and canals were developed during the late 18th and early 19th century, many of which served to link southeastern Pennsylvania with areas to the north, south, and west. During the early 19th century, the steamboat was perfected and soon appeared on major Pennsylvania rivers.

Railroads became the dominant transportation system during the mid-19th century with mass transit systems emerging to serve urban areas in the late 19th century. The emergence of the automobile has been addressed in another section of this paper.

3.4.4.5 Industry

During the 18th and early 19th century, most colonial industries were conducted on the traditional lines of the artisan's shop or the individual craftsmen assisted by his family. Many colonial industries could be carried on in or near the home, while others such as rope walks, ship yards, glass houses, potteries, and breweries required space or specialized facilities that could not be accommodated by the typical dwelling site. Although many craftsmen were undoubtedly attracted by the market potential of Philadelphia, few if any of the colonial crafts were restricted to urban areas. Most of the craftsmen found in Philadelphia were also found scattered among the towns and villages of southeastern Pennsylvania. Before the industrial revolution of the mid-19th century, heavy industry was usually a rural phenomenon with mills, iron forges and furnaces situated throughout the Piedmont on sites where water power was readily available. Between 1820 and 1850, many productive enterprises were becoming industrial crafts where various processes were mechanized and production was carried out by craftsmen and semi-skilled workers who were employed on wages (Laurie 1980).

Iron and coal provided the foundation for 19th century industrialism. Steam power freed heavy industries from the necessity of locating near sources of water power while the influx of large immigrant populations into urban areas provided a cheap source of industrial labor. Factories tended to cluster along the Coastal Plain areas peripheral to Philadelphia. Major industries also developed around towns such as Coatesville, Lancaster, and York. During the 20th century, industry has tended to decentralize and follow the work force into the suburbs, leaving many old industrial neighborhoods as areas of marginal land use and urban blight. It is during the process of renewal and redevelopment in these old industrial neighborhoods that significant archeological resources are often endangered.

3.4.4.6 Residences

During the 18th and early 19th century, dwellings were often utilized for a variety of activities other than living space. In frontier settlements, stout log dwellings often served as defensive positions while early church congregations frequently gathered in private homes until a church or meeting house could be erected.

The characteristic urban dwelling of the 18th century and early 19th century consisted of a row house built on the street front of a long narrow lot. Out-buildings, dependencies and back yard space were located off the street and hidden from view. Urban dwellings were often used for business, with stores and craftsmen's shops occupying ground floor space. During the 19th century block interiors were cut with alleys and courts lined with small tenant houses, considerably reducing the availability of back yard space. Town and village dwellings were usually similar in size to urban dwellings, but were often free standing with spaces for detached dependencies and garden areas. The stone or brick farmhouse was the characteristic rural dwelling of the 18th and early 19th century. Log houses were common in the less densely populated areas of the Piedmont, but were not built in Philadelphia or environs after the end of the 17th century. Large mill complexes and iron furnaces frequently included a managers dwelling and workers' housing. Some large farms also included tenant housing. As a rule, most of the population had only one place of residence although many wealthy urbanites frequently had both a country seat and a townhouse in Philadelphia. The size and opulence of a dwelling, the number of households in residence, and the amount of land appurtenant to a dwelling were usually indices to socio-economic status, especially in urban and town settings where space was a valuable commodity.

After 1850, urban residences often ceased to be used for productive enterprises as the factory replaced artisans shops and cottage industry as the major place of employment. Commercial establishments such as stores, groceries, and apothecary shops continued to be situated in conjunction with living space, and occupancy by several households was not uncommon, especially in poorer neighborhoods. Socio-economic differences became more pronounced as well-defined neighborhoods developed along homogeneous lines and immigrants chose to settle in ethnic enclaves. During this period, relatively little change occurred in town, village and rural housing patterns except where urban industrialism encroached on existing communities.

During the 20th century, the urban exodus to the suburbs resulted in major disruptions to traditional housing patterns in towns, villages, and rural neighborhoods as housing tracts were built on a mass-produced basis and existing dwellings, especially farmhouses, were preserved in totally re-defined cultural settings. During this period many historic structures of a non-residential nature, such as mills, barns, taverns, schoolhouses, and churches, were converted to residential or commercial uses.

3.4.4.7 Defense

Early Swedish and Dutch settlements along the Delaware River were generally organized around a fortified position. However, defense was not a paramount issue among the Quaker settlers. With the exception of sites such as Fort Mifflin (Liggett 1979) and Frankford Arsenal (John Milner Associates 1979), few sites were developed as permanent military installations. Most of the military resources in southeastern Pennsylvania involve temporary encampments or battlefields associated with the Revolutionary War or the Civil War. Archeologically, these sites are manifest as tightly dated contexts in a variety of non-military sites.

3.4.5 Anticipated Resources

The various thematic study units are represented in the archeological record as an enormous variety of structures, features and artifacts appropriate to the site-related activities in question. The extent to which these resources have survived intact must generally be evaluated on a site-specific basis and management strategies determined accordingly.

In general, *in situ* evidence of site-related activities is more likely to be found intact in areas where change has been minimal or where the kinds of changes undertaken have been of a type which resulted in minimal subsurface disturbance. For example, land engineering accompanied by extensive regrading may completely destroy all existing archeological resources while land engineering which has simply involved infilling over historic surfaces may actually result in the conservation of significant resources (Liggett 1970). Other superficially-deposited materials such as railroad ballast, black top paving, and concrete pad floors may also conserve resources, while cut and cover highway or tunnel construction, deep cellar construction, and pile-driven footings may be destructive of significant resources.

Methods of building demolition and the reuse of building materials may also determine the survival of *in situ* resources. For example, brick urban row houses are frequently pushed into their own cellarholes, leaving subsurface foundations intact, while rural barns are frequently stripped of all usable building materials, leaving virtually no structural elements intact. Reuse of old foundation walls during periods of rebuilding may also result in minimal subsurface disturbance despite extensive above-grade alterations to a structure. Many of these conditions can be determined from on-site inspection or from 19th and 20th century insurance maps which often indicate structural specifications.

Culturally determined concepts of cleanliness, compliance with various laws regarding public health, and customary practices regarding the disposal of household refuse, night soil, and industrial waste may also play a role in the deposition and survival of in situ occupation deposits (Roberts and Cosans 1980; Roberts and Barrett n.d.).

3.4.6 Demographic Considerations

Given the nature of historic settlement patterns in southeastern Pennsylvania, it is possible to offer a few preliminary hypotheses regarding the likely locations and preservation potential of various historic sites based on changing demographic patterns. Environmental factors play a small role in the construction of predictive hypotheses pertaining to historic site locations and survival potentials. Instead, such preliminary hypotheses must be based primarily on a consideration of historic resources as the surviving elements in a continually evolving cultural environment. A simple demographic approach to the discussion of the kinds of historic remains that might survive as part of the archaeological record of southeastern Pennsylvania is a distinction between urban, suburban, and rural areas (Commonwealth of Pennsylvania 1974).

3.4.6.1 Urban Historic Sites

Urban sites are generally of two types: (1) those which were initially occupied and developed as urban sites, and (2) those which were originally occupied as non-urban sites and were subsequently changed in character by urban expansion. Obviously, a site of the second type is more likely to be disturbed than the urban site where ongoing development has taken place in the context of existing streets and property lines.

Urban environments produce specific kinds of archaeological resources. Privies, which generally cluster along rear property lines and often contain large quantities of artifacts, are the most frequently encountered resource on the urban site (Cosans 1974, Hunter 1979, Parrington 1980, Liggett 1981). The lower portion of a privy pit may survive relatively extensive redevelopment and frequently represents the only evidence of colonial or early 19th century occupation on many urban sites. Other features commonly found on urban sites may include water wells, drainage systems, storage vaults, ash pits, and cisterns. Stratigraphically defined occupation surfaces, old soil lines, and occupational deposits rarely survive in situ in the urban environment. Building foundations are frequently encountered but are not always of great significance since reuse of other wall components and building materials is a common urban phenomenon. In specific cases, however, structural remains may provide information about architectural details, construction techniques, floor plan, and renovation sequences. Since historic urban neighborhoods were usually characterized by patterns of mixed land use and urban properties were frequently used as both a place of business and a place of residence, commercial or industrial features and deposits are often interspersed with evidence of residential occupation of the site. Archaeological evidence of commercial enterprises such as stores, taverns, boarding houses, inns, restaurants, and hotels may include the same kinds of remains associated with domestic activities, differing only in the quantity of artifacts present. Most pre-industrial production sites generated highly specific kinds of refuse which are easily identified, such as pottery wasters, kiln debris, slag, ash, glass waste, scrap leather, or wood shavings (John Milner Associates, in preparation). As a rule, most urban production sites can be verified by historical evidence, especially during the mid-19th century when insurance maps clearly identify the location and nature of these sites (John Milner Assoicates 1982). Specialized features such as machinery bases or footings, kilns, forges, and processing vats are readily identified when encountered. The remains of early utility and transportation systems often survive intact beneath modern city street surfaces while old wharves and piers are often encased in modern facades.

Another major category of archaeological resources in the urban environment is the evidence related to land fill and reclamation, especially in the Coastal Plain areas along the Delaware River. Early fills often contain artifacts, and the process of infilling the reclamation can often be chronologically seriated by artifact content. This reconstruction of fill sequences can be particularly useful in areas where urban development has encroached on non-urban areas or where riverine provinces have been radically altered over time. This approach to fill seriation also has application to the analysis of flood plain stratigraphy along the streams and rivers of the Piedmont.

3.4.6.2 Suburban Historic Sites

Suburban sites are generally of two types: (1) those which were initially occupied and developed as town or village sites, and (2) those which were originally occupied as rural sites and were subsequently changed in character by suburban expansion. Because pressure on suburban land is less intense than that on urban land, suburban sites are more likely to include standing buildings even though the cultural setting in which these sites presetly exist may have been radically altered by modern development.

As noted above, suburban development generally took place within the traditional pattern of historic townships and village centers (cf. Bean 1884, Futhey and Cope 1881, Ashmead 1884), with the established village centers providing nuclei for suburban development. Non-residential sites in historic town and village centers such as sotres, craft shops, public buildings, churches and meeting houses share many common characteristics with their urban counterparts, differing only in scale and in density of utilization. The greater space available in the less crowded towns and villages throughout southeastern Pennsylvania permitted a greater elaboration of the residential complex with free standing buildings and a variety of specialized outbuildings and activity areas such as wash houses, smoke houses, summer kitchens, carriage houses, stables, spring houses, root cellars, wood sheds, chicken coops and ornamental or kitchen gardens as well as the privies, cisterns, water wells, drainage systems and other features commonly found on urban residential sites. Not only are the structures or their remains more likely to survive suburban development, but the more fragile stratigraphic remains such as occupation surfaces and old soil lines are more likely to be found in situ.

Suburban encroachment into rural areas is more likely to destroy resources associated with the agricultural economy, leaving farm houses intact for continued occupation as dwellings or conversion to various commercial uses totally unrelated to their original function. In these instances, the impact on archeological resources must be evaluated on a site-specific basis.

3.4.6.3 Rural Historic Sites

Sites in the open countryside, including independent farmsteads, stores, taverns, mill forges, schoolhouses, churches, and isolated blacksmith or wheelwright shops are not only likely to survive intact, but are often found to be occupied and utilized for their intended functions. Contemporary utilization of rural sites, especially agricultural sites, constitutes an important aspect of the archaeological data base that is frequently overlooked on the historic site. Rural commercial and institutional sites are usually consistent with the patterns described for towns and villages. Archaeological resources left by agricultural activities include barns, sheds, fences, gates, field lines, ditches, windmills, and fire ponds. Subsurface structural remains are more likely to remain intact in the rural setting as are stratified occupation deposits in back yards, barnyards, and dump sites. Mill sites are generally marked by the presence of dams, raceways and used millstones even when the mill buildings themselves have ceased to exist. The identification of mill sites is often facilitated by the preservation of mill associations in rural road names. Furnace sites can often be identified by slag deposits, evidence of charcoal burning, and mine pits.

3.4.7 Management Considerations

It can be readily seen that the survival of significant resources and the potential for their preservation varies greatly in southeastern Pennsylvania. In urban Coastal Plain areas the potential for the survival of historic resources is considerably better than that predicted for prehistoric resources in the same area. This is due in large measure to the fact that historic resources represent integral components of the developmental process that has been ongoing for the past three centuries. In general, historical evidence for urban sites is prolific and a large proportion of sites can be precisely located, significant resources predicted, and the probability of survival estimated on the basis of archival research alone. The further one moves into the substantially rural environs of the northern and western portions of the Piedmont, the more likely it becomes that sites will be found not only intact, but also in continuing use. Historical evidence in these areas is often less abundant and less precise, however, thereby requiring the thorough kinds of survey reconnaissance and testing necessary to evaluate prehistoric sites.

Although urban privies and the artifact assemblages recovered from them will continue to provide a major source of significant archeological evidence for urban sites, greater attention should be directed to the development of research strategies which provide adequate testing for more fragile resources, such as old use surfaces, original soil lines, and backyard occupation deposits, especially in areas which archival research has identified as historic open space (John Milner Associates 1982). Greater attention should also be directed to non-residential sites such as wharves, public buildings, factories and other manufacturing sites, streets, and burial grounds.

The analysis of urban archeological resources can be more effectually undertaken in the context of community-oriented studies where various aspects of the urban environment provide the analytical matrix. Areas which can profitably be pursued include socio-economic status and ethnic models derived from tax and census records, land use models derived from insurance maps and observations of contemporary spatial utilization, and market-oriented models derived from port books, advertising, and inventory lists.

Since the bulk of the extent urban archeological data base, including archival data, standing buildings and archeological sites is oriented to 18th century Philadelphia, it is necessary to expand this data base to include, at a minimum, Chester, Coatesville, Lancaster and York, which are also demographically and legally defined as urban, and to place greater emphasis on the recovery of 19th century resources, particularly those associated with the first half of the 19th century.

The primary thrust of future archeological studies in the suburban and rural context should be directed toward the identification and description of extent resources. In order to provide a balanced overview of historic development in southeastern Pennsylvania, it is necessary to develop and test models for towns, villages and rural neighborhoods comparable to the socio-economic status, ethnic, and ecologically based models currently being developed and utilized in the investigation of urban sites.

In order to provide a more comprehensive basis from which to generate management strategies for historic sites in the eight-county area of southeastern Pennsylvania several kinds of information can profitably be collected, organized, and made readily available to those involved in both the investigation and management of historic resources. These include the following:

(a) Compilation of a gazeteer for southeastern Pennsylvania comparable to that developed for the State of New Jersey.

(b) Preparation of an annotated bibliography and handbook of county and municipal resources, including such information as the availability of duplicating services, camera policy, hours, phone numbers for information, etc.

(c) Comprehensive inventory of all known and potential sites keyed to USGS quadrangle maps, including information such as present condition and ownership, inventory status, excavation status, etc.

In summary, contemporary urban and suburban development in the major populated areas of the Coastal Plain and Piedmont continues to represent the most serious stress on the historic archeological resource base. This threat is especially seen as prevalent in the areas of the Coastal Plain immediately adjacent to the Delaware River, as well as in Center City Philadelphia and surrounding suburbs, where contemporary development is occurring at a rapid pace.

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3.6 Repositories, Institutions, and Organizations With Archaeological Records, Files, and/or Collections from the Piedmont and Coastal Plain of Southeastern Pennsylvania

American Swedish Historical Museum	Philadelphia
Atwater-Kent Museum	Philadelphia
Brywn Mawr College (Dept. of Anthropology)	Bryn Mawr
Bucks County Conservancy	Doylestown
Bucks County Historical Society	Doylestown
Chester County Historical Society	West Chester
Delaware County Historical Society	Chester
Delaware County Planning Department	Lima
Franklin and Marshall College (Dept. of Anthropology)	Lancaster
Historic Fallsington, Inc.	Fallsington
Historical Society of the County of Montgomery	Norristown
Historical Society of Pennsylvania	Philadelphia
Independence National Historical Park	Philadelphia
John Milner Associates, Inc.	Philadelphia
Lancaster County Historical Society	Lancaster
Mercer Museum	Doylestown
Mid-Atlantic Archaeological Research, Inc.	Newark, Delaware
Pennsbury Manor	Falls Township
Pennsylvania Historical and Museum Commission	Harrisburg
Philadelphia City Archives	Philadelphia
Philadelphia Historical Commission	Philadelphia
Temple University (Dept. of Anthropology)	Philadelphia
University of Pennsylvania (Depts. of American Civilization and Anthropology)	Philadelphia
Valley Forge National Historical Park	Valley Forge
West Chester University (Dept. of Anthropology)	West Chester

CHAPTER 4

THE RIDGE AND VALLEY PROVINCE

4.1 Purpose and Objectives

Since development in the Ridge and Valley Province in upcoming decades will reduce the number of opportunities to conduct archaeological and historical research, it is critical that plans, however general in scope, be made now to effectively allocate financial resources and preserve note-worthy sites. The central purpose of this document is to provide the reader with a perspective on cultural resources in the Ridge and Valley Province; a perspective shared by the several authors who conduct research in this area and who see first-hand the unrealized potential of its cultural resources. We acknowledge that our perspective is in large part influenced by broader concerns in the disciplines of archaeology and history in the 1980's, and as a result may be seriously challenged in the future for its relevance to regional conservation. If, however, we view the historical preservation movement as itself evolving in its goals and procedures, then this document can serve a useful purpose. The perspective embodied here can provide a reasonable basis for selecting a limited number of sites or districts worthy of long-term preservation efforts and for reaching decisions on the allocation of scarce financial resources.

So that the reader understands the foundations of the perspective we have developed, Sections 4.2 - 4.6 will address our theoretical position and the existing data base for the region. By adopting the tenets of "Cultural Ecology" we acknowledge a close relationship between resource distribution and availability on the one hand and the location, size, and configuration of human social groups on the other. Research into anthropologically and historically meaningful problems relies on a statistically reliable inventory of sites, but focuses on behavioral responses regarding resource procurement and allocation. It is these responses, reflected in the assemblages of material goods and settlements across the landscape, that are the targets of social scientific inquiry. Hence, Sections 4.7 - 4.9 outline what we regard to be the research potential of the region and the points of disparity between the existing data base for the area and that needed for the realization of its research potential.

4.2 Study Unit Definition

The Ridge and Valley Province (Figure 4.1) of the Appalachian Mountains is thoroughly described by Fenneman (1938:195-278). The entire Province reaches 1,200 miles, from the South Coastal Plain to the St. Lawrence Valley in the North and is wedged between the Piedmont on the east and the interior plateaus on the west.

The Ridge and Valley Province is divided into several sections. The northern half of the middle section is contained within portions of three river basins (see Figures 4.2 and 4.3) in Pennsylvania. Considered the most typical of the Ridge and Valley sections, with a characteristic trellised drainage pattern, the middle section is also the widest portion of

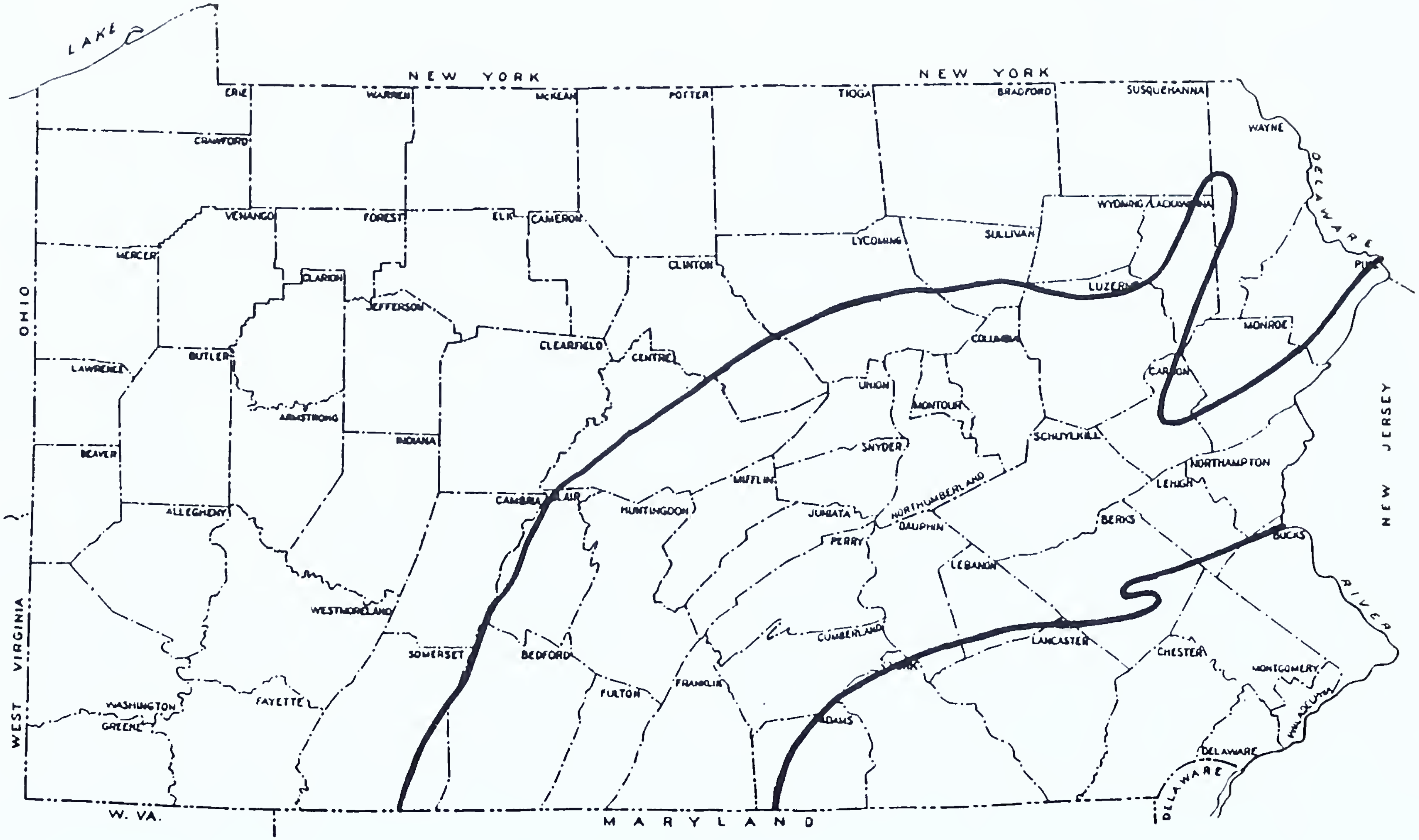


Figure 4.1
The Ridge and Valley Province

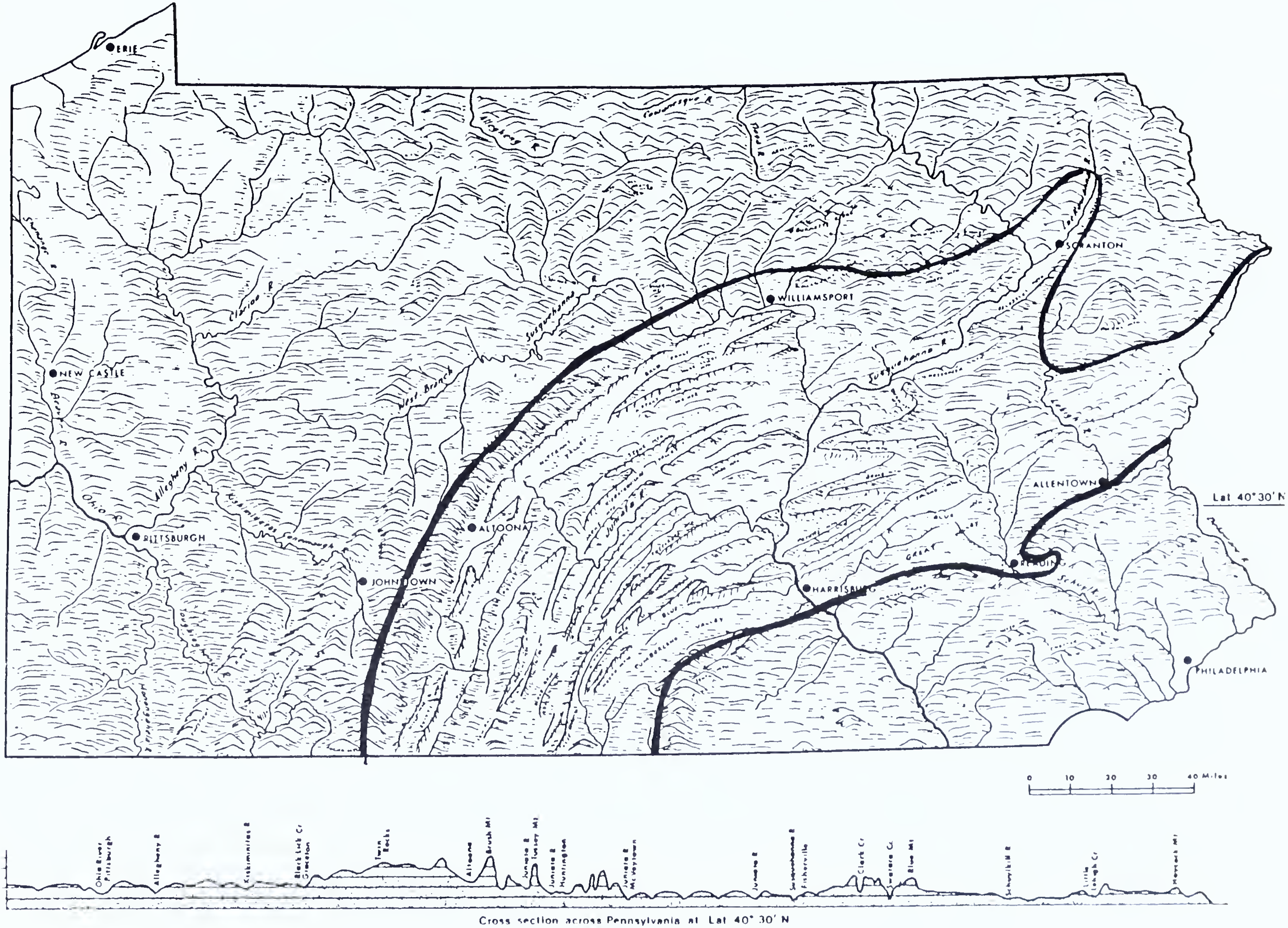


Figure 4.2
Ridge and Valley Province: Topography

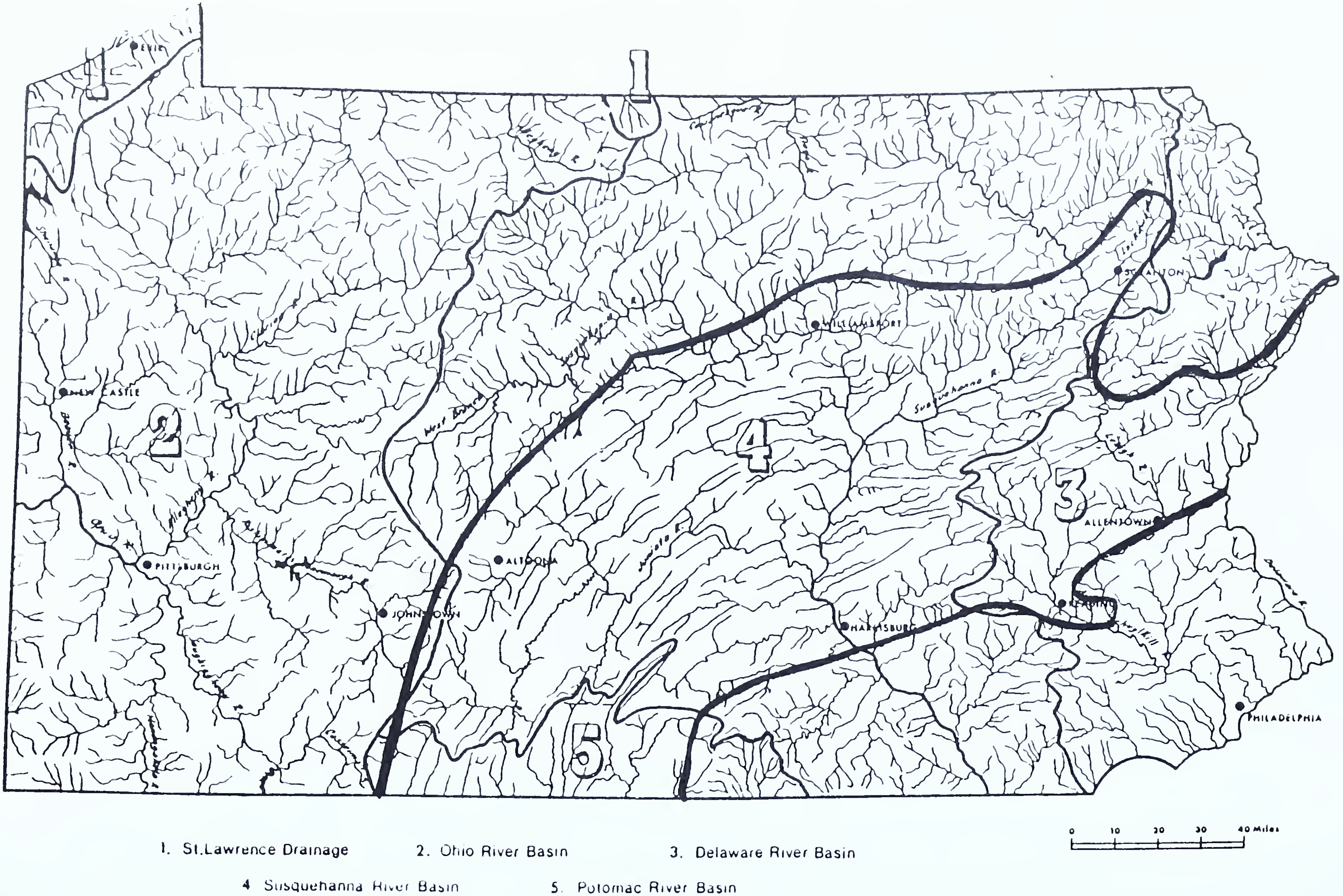


Figure 4.3
Ridge and Valley Province: Drainage

the entire Province, expanding to over 80 miles in width between Harrisburg and Williamsport. The middle section is further divided into segments. In Pennsylvania there are two segments of the middle section of the Ridge and Valley Province: Delaware-Susquehanna Segment and the Susquehanna-Potomac Segment.

The Susquehanna-Delaware Segment is noted for relatively short folds, i.e., short ridges and valleys, as well as a general structural depression. The steep pitch decreases to the northeast.

The Susquehanna-Potomac Segment has the most characteristic landscape with regular repetitions of continuous, parallel, even crested ridges with intervening valleys up to 10 miles wide. No recent glaciation has occurred within the Province: its absence is an identifying feature.

The important chronologic subdivisions of the Ridge and Valley Provinces are:

Paleo-Indian		? - 7000 B.C.
Archaic,	Early	7000 B.C. - 5000 B.C.
	Middle	5000 B.C. - 3000 B.C.
	Late	3000 B.C. - 1000 B.C.
Transitional		1800 B.C. - 800 B.C.
Woodland,	Early	1000 B.C. - 300 B.C.
	Middle	500 B.C. - 1000 A.D.
	Late	1000 A.D. - 1550 A.D.
Colonial		1550 A.D. - 1776 A.D.
Revolutionary and Federal		1776 - 1814
Early National		1814 - 1860
Civil War and Reconstruction		1860 - 1875
Guilded Age		1875 - 1900
Progressive		1900 - 1920
Imperialist		1920 -

4.3 Review of the Literature

4.3.1 A Thematic Review of Selected Ridge and Valley Archaeological Research

The purpose of this literature review will be to isolate major contributions and research trends developed by archaeologists working in Central Pennsylvania. This review will in no way be exhaustive. Rather, it will examine the more significant contributions made over the last 15 to 20 years. A review of the literature indicates that research contributions may be broken down into five general categories of study: lithic technology and lithic sourcing, subsistence, regional surveys, chronology, and site-specific excavations which examine assemblage and internal site structure.

4.3.2 Lithic Technology and Sourcing

The first sophisticated study of lithic technology in Central Pennsylvania was published by Witthoft (1952). It was concerned with the analysis of a surface collected assemblage from the Shoop Site, a locality which dates to the Paleo-Indian time period. In this study Witthoft was not only concerned with the description of the assemblage attributes, but also managed to reconstruct aspects of core reduction and techniques of projectile point fluting. It was not until 20 years later that additional studies took a similar approach, and based lithic studies within a behavioral framework.

In response to the realization that lithic assemblages constitute the primary and most easily available source of information for the majority of sites in the Ridge and Valley Province, due to the poor conditions of preservation of other data types, a study of local lithic sources was undertaken by Schindler *et al.* (1982). The product of this work was a fuller understanding of the lithic reduction sequence for Bald Eagle Jasper (Hay 1981; Schindler *et al.* 1982). As a result of this work, specific activities associated with lithic reduction can be determined for each site and can be used along with other data to establish a site typology and preliminary settlement system models.

As additional aspect of the study by Schindler *et al.* (1982) was the examination of the geographical distribution of lithic materials in relation to their source localities. Phase specific patterns were easily detected and were interpreted to reflect differences in procurement strategies and organization of the population.

This interest in the regional distribution of lithic materials has been carried further by Miller (1982). She proposes that specific pattern models of lithic distribution can be used to infer behaviors concerned with lithic source accessibility and control as well as patterns of inter-group exchange. In her work, she establishes a "source assignment procedure" using neutron activation analyses, whereby jasper samples may be assigned to source localities on the basis of their chemical composition. [Similar work is currently being carried out by Richard Jordon and Glenn Sheehan of Bryn Mawr College.]

Currently in progress is a study by James W. Hatch at Vera Cruz Jasper Quarry. Excavations at the quarry have been directed towards the understanding of prehistoric mining techniques and the lithic reduction activities occurring at the quarry site.

4.3.3 Chronology Building

As a result of the limited occurrence of stratified archaeological sites in the Ridge and Valley Province the temporal assignment of morphologically distinct artifacts has been hampered. Consequently, a regional chronology for the area which can account for local variations in style has not been developed. To alleviate the problem, time-sensitive lithic artifacts have been phased by the borrowing of validated chronologies from adjacent areas such as New York (Ritchie 1965, 1971), and areas further south (Broyles 1966, 1971; Coe 1964). The Sheep Rock Shelter (Michels and Dutt 1968) is one of very few sites in the region that has been used to test the local applicability of these borrowed chronologies. Ceramic chronologies have also been borrowed from areas just to the south of the Ridge and Valley Province. Many years of research along the lower Susquehanna River have resulted in the definition of a detailed assortment of types within the general Vinette 1 - Clemson Island - Shenk's Ferry - Susquehannock trajectory which allows relatively accurate phasing. However, past models of ceramic change which focus on population displacement and migration (Wittoft and Farver 1952; Heisey 1971) have prevented further specificity in phase assignment.

Hatch's (1980) excavations at the Fisher Farm Site (36 CE 35) has resulted in the recovery of the only stratified ceramic sequence for central Pennsylvania. Ceramics excavated from an extant stream bed show that ceramic change at the Fisher Farm Site is reflected by increasing and decreasing frequencies of design motifs and morphological attributes over time and corresponds to the sequence derived from research in southeastern Pennsylvania. In contrast however to the population displacement models inferred from southern Pennsylvania ceramic assemblages, Hatch maintains that the ceramic data represent a gradual shift in ceramic styles over time occurring within a stable local population.

4.3.4 Regional Surveys

Since 1970, five regional surveys of varying scope have been undertaken in the Ridge and Valley Province. The goals of these studies have included not only the documentation of sites for the purposes of preservation and inclusion on the National Register of Historic Places, but also the definition of the settlement pattern on a phase specific basis and development of predictive models of site distribution on the basis of ecological data. In addition to these major endeavors, cultural resource management surveys have continued to provide additional site distributional data.

The Bald Eagle Creek watershed has received the most intensive survey coverage within the Ridge and Valley Province. In 1978 a large-scale survey covering a total of 22 square miles was initiated under the direction of James W. Hatch (Hatch 1980). The objectives of this survey were to document the settlement pattern within the different environmental settings of the Bald Eagle and Nittany valleys and to collect data on the spatial, chronological, and functional dimensions of each site. With data collected from 148 prehistoric sites Hay and Hatch (1980) were able to test several propositions concerning the determinants of site distribution.

Their analysis revealed that site densities for Late Archaic and earlier sites are highest where natural resources (i.e., water, lithic sources, concentrations of wild plant food) are clustered. They also propose and document a strong correlation between Woodland period sites and the distribution of high quality agricultural soils as well as black flint outcrops. The lack of a detailed paleo-environmental reconstruction for the valley system has prevented the testing of more specific propositions with this data base.

Survey of the Bald Eagle Valley, Nittany Valley, and several adjacent valleys continued for an additional two years under the Regional Archaeological program (Hay et al. 1980; Hay 1981; Hay 1982). Using both systematic surface survey and collector interview techniques, a total of 144 new sites were recorded and were used to refine previous predictive models. In 1979-1980 emphasis was placed on the low-site probability and rolling Karstic areas of Nittany Valley which are drained by small streams. Hay was able to document that this type of area was lightly used and that the primary determinant of the settlement pattern was the distribution of water resources.

One additional survey was carried out along the Allegheny Front, on the north slope of the Bald Eagle Valley. Stevenson (1978, 1983) conducted a small-scale survey of three hollows to document the settlement in this peripheral area and proposed that the settlement pattern for the Bald Eagle Valley best fits the radial distribution model. Stevenson postulates that central valley base camps are surrounded by sites of more limited function within the hollow entrances and hollow source areas. As distance increases from valley floor camps, not only do prehistoric sites decrease in artifact density buy they also exhibit a less varied tool kit. On the basis of a detailed microenvironmental reconstruction of the hollows and documented seasonal distributions of high yield resources (i.e., nuts, deer) seasonal occupations at specific sites are postulated.

An additional major surface survey program within the central region was conducted by Turnbaugh (1977), and encompassed portions of the West Branch of the Susquehanna and selected tributaries. With a data base of 226 sites Turnbaugh was able to determine broad regional patterns and, in addition, identify the function of sites within different ecological zones. The survey constituted the first stage of a large-scale research program under the direction of Ira F. Smith (Smith 1977). In 1973, 1975, and 1976 surface survey and collector interview techniques were used to record over 700 sites along the Susquehanna River and its East and West Branches. Although the focus of research was directed toward the location and investigation of Clemson Island phase archaeological sites, occupations from all phases of Pennsylvania prehistory were recorded.

4.3.5 Environmental Reconstruction and Subsistence Studies

The reconstruction of the paleo-environment of the Ridge and Valley Province has, until very recently, not been attempted. The information which is available today is derived from palynological studies (Bernabo and Webb 1977; Delcourt and Delcourt 1981; Watts 1979) and forest ecologists (Baldwin 1961). Detailed reconstructions of aboriginal settlement systems and the development of powerful predictive models hinge upon the ability to reconstruct the past resource distributions in detail. Beckerman (1978) has recently developed an approach which permits the fine-grained reconstruction of pre-contact holocene environments. On the basis of known species preferences for certain conditions of soil type, moisture, and topography along with early surveyor reference trace data, the forest composition may be specified in detail and the food potential of areas estimated. This methodology, however, has not been applied on a broad regional basis within the central region.

Subsistence studies with the objective of reconstructing prehistoric diet, patterns of hunting and gathering, and horticulture have been very limited. Webster (1978) has conducted the only behavioral analysis of faunal material from an archaeological site. His analysis of the assemblage of deer bones from the Sheep Rock Shelter sought to assess patterns of seasonal deer consumption as well as hunting and butchering patterns associated with this activity. Microbotanical analysis is also beginning to be incorporated into the research designs of archaeologists. Although few results of flotation analysis are published, the work of Hatch and Daugirda (1980) and Willey (1980) exemplifies the importance of this technique. The analysis of prehistoric features at the Fisher Farm Site by these individuals resulted not only in the documentation of the prehistoric diet, but the alteration of the standard function interpretation of "keyhole" structures. Smith (1976) proposed that on the basis of ethnographic observation and absence of cultural debris from excavation that these features served as sweathouses. In contrast, the analysis of flotation materials from a similar structure at Fisher Farm suggest that the primary function of the structure was for the drying and curing of several foods.

4.3.6 Site Specific Excavations: Internal Site Structures and Assemblage Analysis

In comparison with other areas of the eastern United States, very few archaeological sites in the Pennsylvania Ridge and Valley region have undergone extensive excavation and analysis (Table 4.1). There have been many more preliminary excavations or surface collections of sites in the context of the regional surveys discussed above. These have permitted the development of models concerning settlement strategies. The excavation of the sites in Table 4.1 have provided two types of data with which to test settlement system models: information on internal site structure and on the manufacture and use of lithic items.

The documentation of internal site structure has largely been confined to the excavation of Woodland period sites. Large-scale excavations at the Parker Site (Smith 1973), Fisher Farm (Hatch 1980), Ramm (Smith 1976), Nash (Smith 1976), Quiggle (Smith 1976), and Bedford (Hatch, in preparation) have revealed the arrangement of houses, features, and stockades. With information from the analysis of feature function, botanical analysis, and chronological data, reliable inferences have been made concerning group size, site function, and seasonal occupation.

TABLE 4.1

EXCAVATED PREHISTORIC SITES IN THE RIDGE AND VALLEY PROVINCE

	Site Name	Type	Phase	Reference
1.	Bedford Village Site (36 Bd 90)	Village	Late Woodland	Hatch (in preparation)
2.	Bull Run Site (36 Ly 119)	Village	Late Woodland	Bressler (1978)
3.	Canfield Island Site (36 Ly 37)	Campsite	Archaic-Woodland	Bressler (under excavation)
4.	Dundee Site (no number)	Village	Late Woodland	Smith (1973)
5.	Fisher Farm Site (36 Ce 35)	Hamlet	Late Woodland	Hatch (1980)
6.	Houserville Site (36 Ce 65)	Lithic Workshop	Archaic	Schindler et al. (1982)
7.	Milesburg Site (36 Ce 38)	Campsite	Archaic-Woodland	Webster et al. (1977)
8.	Parker Site (36 Lu 14)	Village	Late Woodland	Smith (1973)
9.	Schacht Site (36 Lu 1)	Village	Late Woodland	Smith (1973)
10.	Sheep Rock Shelter Site (36 Hu 1)	Rockshelter	Archaic-Woodland	Michels and Smith (1967) Michels and Dutt (1968)
11.	Workman Site (36 Bd 36)	Hamlet	Late Woodland	Michels and Hunter (1968)
12.	Ramm Site (36 Cn 44)	Village	Late Woodland	Smith (1976)
13.	Quiggle Site (36 Cn 6)	Village	Late Woodland	Smith (1976)
14.	Nash Site (36 Cn 17)	Village	Late Woodland	Smith (1976)
15.	Kress (36 Cn 2)	Village	Late Woodland	Smith (1977)

The objectives achieved by the excavation of sites which date to earlier periods have been more limited. Because of poor preservation of many of these sites, the information derived from them has been confined to the results of lithic assemblage and chronological analyses.

4.3.7 Changing Approaches in Ridge and Valley Historical Research

The earliest histories of the Ridge and Valley Zone are parts of larger general histories of Pennsylvania. One of the earliest is Benjamin Franklin's A True and Impartial State of the Province of Pennsylvania (1759), which is primarily a political history and includes an explanation of Franklin's defense of the frontier during the French and Indian War. Another well-known work is Robert Proud's History of Pennsylvania (1798), the first systematic study of the colony and state, though primarily concerned with eastern Pennsylvania.

The first histories devoted exclusively to the Ridge and Valley Zone are those published in the early nineteenth century by Isaac Daniel Rupp and include: History of the Counties of Berks and Lebanon (1844); History and Topography of Dauphin, Cumberland, Franklin, Bedford, Adams, Perry, Somerset, Cambria, and Indiana Counties (1846); History of Northampton, Lehigh, Monroe, Carbon and Schuylkill Counties (1845); History and Topography of Northumberland, Huntingdon, Mifflin, Centre, Union, Columbia, Juniata, and Clinton Counties (1847). Rupp's histories encompassed the broad sphere of political, social, economic, and religious development and included such things as Indian settlements, early European settlements, the establishment of the county on a township-by-township basis, current status of the township including population, industries, religions, social organization, prominent businesses, businessmen, government figures, and families.

In the late nineteenth century, histories were usually written on a county-by-county basis by a local antiquarian or historian, much in the same style as Rupp's works. Notable volumes include those by John Blair Linn, Annals of the Buffalo Valley (1877) and History of Centre and Clinton Counties (1883); and John F. Meginness, Otzinachsin: A History of the West Branch Valley of the Susquehanna River (1889).

The national centennial celebration of 1876 encouraged community pride and accomplishment through the writing of local histories (among other activities). A plethora of county histories and, for the first time, atlases complete with engravings of prominent structures and people were published. F. W. Beers, a map company based in New York was quick to capitalize on the potential market and published atlases in many states. In the Ridge and Valley Zone the company published County Atlas of Carbon (1875); Columbia and Montour Counties (1876); and County Atlas of Monroe, Pennsylvania (1875). These books were useful in describing the historical and contemporary status of a county or particular valley, but did little to advance the writing of professional critical history. They were written as descriptive narratives for a popular audience. Also, written during the Guilded Age, when the accumulation of wealth engendered social prestige, the history of the poor, minorities, ethnic groups, and "the common man" was neglected or ignored altogether. The achievements of individual men or companies, and their contributions to the county's economic welfare were often stressed.

These types of histories continued to be written after the turn of the century, and in many cases are still being written today, usually under the auspices and with the encouragement of a local or county historical society. In many cases original county histories are being republished. Conway P. Wing's History of Cumberland County (1879), for example, was reprinted in 1982 by the Cumberland County Historical Society.

At the turn of the century, local and state historical societies began publishing minutes and proceedings of their meetings, and often the text of lectures or articles which explored interesting aspects of local history. These often used contemporary documents to bolster their statements. These were similar in narrative to the broader county histories but focused on individual topics or people.

Within the past 80 years, American historical writing has taken a more "scientific" approach; that is, hypotheses about specific topics were formulated and answered. Some topical works relating to the Ridge and Valley Zone include Arthur C. Bining, Pennsylvania Iron Manufacture in the Eighteenth Century (1956); Wayland F. Dunaway, The Scotch Irish of Colonial Pennsylvania (1935); and Robert B. Saylor, The Railroads of Pennsylvania. Most of these have a statewide focus.

Historians have changed their focus in recent years from a concern with great men and great achievements to a sociological interest in the lifestyle of the "common man." These are the men and women who worked as laborers and farmers, lived out their lives and died largely unnoticed by historians of the past. In the Ridge and Valley Zone there are very few works written in this vein. These include Stevenson W. Fletcher, Pennsylvania Agriculture and Country Life, 1640-1940 (2 vols.) (1940); and From the Molly Maguires to the United Mine Workers: The Social Ecology of an Industrial Union, 1869-1897 (1971).

Future historical research in the Ridge and Valley Zone should be compatible with the current techniques used nationally by historians today. Historical research should be accomplished with all available primary resources, which can include the use of original documentation, oral histories, and field inspection of historical sites. It should consider or test hypotheses on current local, regional, or general historical or historical archaeological problems. The local history of Pennsylvania's Ridge and Valley Zone should be placed in the context of historical questions of larger scope.

4.4 Environmental Resources

4.4.1 Soils

Soil series in the valleys in the center of this area tend to have fair to good agricultural potential with adequate water and drainage (Beckerman, in Hatch 1980:30-31). The soils are well suited to forest; the entire section being characterized by an Oak-Chestnut, Maple, Beech and Hemlock association.

The soils grade up toward the ridge tops and become moderately coarse with generally poor agricultural capabilities, but are of good or very good quality for Pine, Chestnut Oak, and Chestnut forest associations. Abundant numbers of nut-producing trees were present prehistorically and were an important factor in aboriginal life (Beckerman, in Hatch 1980). During the late prehistoric and colonial eras the location of these soils was of paramount importance in determining population distribution. Throughout the historic period, quality farmland has been the economic backbone of the Ridge and Valley Province.

4.4.2 Game Animals

Also utilizing the abundance of nut crops and seeds were numerous animal species such as white-tailed deer (*Odocoileus virginicus*), black bear (*Ursus americanus*), and wild turkey (*Meleagris gallopavo sylvestris*), among the most important types.

While these mammalian species were numerous and essentially ubiquitious in the region, though with seasonal habits which affected their availability, many other important types of animals were migratory. Certain anadromous fish, such as shad, and many types of waterfowl were utilized and are important evidence of seasonality in archaeological sites (see Anonymous 1934; Guilday 1965, Hatch 1980, Webster 1978).

4.4.3 Forest Cover--A Diachronic View

Although current long-range reconstructions by palynologists are still very general it is clear that past environmental conditions within the Ridge and Valley Province have varied extensively over the last 14,000 years. Changes in the environment have involved not only major shifts in forest composition, but also subtle changes in species diversity and frequency. Since these environmental changes undoubtedly affected the structure of hunter-gatherer and horitcultural settlement systems they will be outlined below. This summary is based on the work of Bernabo and Webb (1977), Delcourt and Delcourt (1981), and Webb(1979).

Before the Laurentian ice sheet began to melt approximately 14,000 years ago it is assumed that vegetation distributions were stable for several thousand years. During this phase two forms of tundra environments were present within the Ridge and Valley Zone. The first was a grass-dominated tundra found in lowland sections of Pennsylvania. In the more elevated sections of the central Appalachians, as much as 450 km south of the ice front, a sedge tundra predominated. In sections of the Ridge and Valley system and the mountains of West Virginia this environment is thought to have persisted, due to perma-frost conditions (-2° to 8°C annual temperature), until about 12,600 B.P.

With the retreat of the ice sheet and the ensuing warming period the late glacial spruce forest migrated northward and reached northeastern Pennsylvania by 13,300 B.P. Around 13,000 B.P., alder, juniper and poplar species invaded the southern Ridge and Valley area and spread northward. This is followed by the appearance of red spruce in the pollen assemblage at 11,600 B.P. By 11,500 B.P. white pine had become a component of the forest and had migrated as far north as northeastern Pennsylvania.

By 10,000 B.P. the Jack Pine-Spruce forest had moved into New York State and was replaced in the Ridge and Valley Provinces by a mixed conifer-northern hardwood/deciduous forest. The modern geographic configuration was reached by 7,000 B.P. but has been continuously modified up to and after this time by the immigration of new taxa. These species spread at different rates depending upon their tolerances, competitive strategies, and dispersal capabilities. Birch, maple, beech, and hemlock were the first to enter and were followed later by hickory and chestnut. Chestnut had been present in southern West Virginia by 10,000 B.P. but did not reach northern Pennsylvania until 5,500 B.P. Additional data on the spread of broad-leafed trees is not available since small pond sites cored by palynologists for samples are not favorable seed traps for their fruits or cupules.

By 5,000 B.P. the species associated with the mixed coniferous/northern hardwood forest had moved into Canada. Within the ensuing deciduous forest, Oak and Chestnut became dominant in the central and southern Appalachian region. With the increased aridity and warmth of the Hypsithermal, the mixed Larchwood forest became confined to the Ridge and Valley section and has remained essentially the same until today.

Due to the stability of the environment over the last 2,000 years it is possible to model contemporary ecological conditions and cautiously extrapolate back. Based on hydrologic, soil, and temperature factors and the known microenvironmental preferences of individual plant species more detailed reconstructions are possible. Studies by Baldwin (1961), Beckerman (1978), and Stevenson (1983) have proposed a plant resource distribution for the Bald Eagle Valley and Penns Valley which may be generally applicable to similar settings of the Ridge and Valley Province.

For the most northerly valleys and higher valleys near or adjacent to the Allegheny Plateau the following model of plant zonation is proposed:

> On the edge of the plateau and immediately below the rim on the steep slopes, there exist high frequencies of black, red, and scarlet oaks. In this same area but situated in rocky areas with very little soil are high frequencies of chestnut oak. Red oaks predominate on the less severe slopes below the ridge tops. Ridge summits are dominated by the black and scarlet oaks.
>
> For the lower slopes and adjacent to the floodplains of the hollows and of the Bald Eagle Valley, there is quite a different forest configuration. White oak, red oak, and hickory predominate with hemlock occurring in lower frequencies. All of the strata discussed so far contain minor species such as basswood, tulip oak, maple, and pine, together comprising up to 25% of the total number of trees within the forest community.

> Hollow floodplain environments have white oak as the dominant species with lesser species consisting of black oak, red oak, hickory, and walnut and occasional white and pitch pine. Wild grasses increase in density as one descends the hollows due to the increase in-hollow run-off and ground water towards the hollow mouth. Soils which are presently classified as well drained and high yielding agricultural soils will have few weeds and grasses since the rapid growth of trees is promoted. These trees out-compete second and third story plants and severely curtail other types of growth on the forest floor.
>
> The ecological configuration of the Bald Eagle Valley floodplain is almost identical to that of that larger hollows. Stream banks are associated with a high frequency of grasses and hemlock. Directly adjacent and parallel to this is a mixed mesophytic association consisting of white oak, sugar maple, and pine. The majority of the floodplain area is again dominated by white oak, with black oak, red oak, and scattered white and pitch pine.
>
> The north-facing slope of Bald Eagle mountain is characterized by a more or less uninterrupted incline from the base to the summit. The top of this slope is dominated by white pine and hemlock with low frequencies of chestnut. The lower area from the summit to the valley floor is primarily red, white, black, and chestnut oak with lower frequencies of hemlock. (Stevenson 1983)

The ecological configuration of wider valleys may differ as a result of differing topographic and hydrologic conditions. Baldwin's (1961) study of Penn's Valley is specific enough to give an understanding of the species variety in these wider valleys and can at present serve as a preliminary model:

The floodplain of Penn's Valley contains the same diversity as narrower valleys in that they contain white oak, red oak, black oak, and chestnut oak, as well as white and pitch pine. However, in contrast white oak is numerically dominant and forms large white oak flats on the valley floor.

On southern slopes red oak, black oak, white oak, and bear oak are present in abundance with white of highest frequency followed by black and chestnut oak. Hemlock appears near high moisture drainage areas or small tributary streams. In contrast, northerly slopes consist of an oak-chestnut-pine segregate.

The distribution of these species not only conditioned the availability of plant foods for humans and game animals during the prehistoric period, but it also resulted in a major lumbering industry during the 1800's A.D.

4.4.4 Lithics and Mineral Resources

Lithic resources were also an important consideration in prehistoric aboriginal economies. The Ridge and Valley Province has several well-known quarries used extensively in prehistory. Beckerman notes that oolitic chert, cherty dolomite, grey chert, flint, and jasper can all be found in and around the Centre County area (Hatch 1980:25-26). Near South Mountain, in Franklin County, aboriginal rhyolite quarries are well-known archaeologically. In Lehigh and Berks counties, aboriginal jasper quarries are prominent features in the local landscape. Lehigh County, in particular, is well known for the Vera Cruz and Macungie jasper quarries, as well as others.

Other lithic resources are present or abundant. Easanite, a black rock resembling jasper, may be found in nodular form in Berks County streams. Quartzite was quarried in Franklin and Berks counties, and chalcedony is reported in nodular form in Berks County. Argillite, a soft but serviceable metamorphic clay stone, can be found near the Delaware River (Mercer 1894; Deisher 1933). Almost any of the many creeks and rivers of the Province may contain one or more of the various lithic resources mentioned as cobbles within their beds.

Coal exists in vast deposits in the Ridge and Valley Province of Pennsylvania. Its early development for the running of steam locomotives gave way to steel production and the rapid development of the iron ore business in the early 1800's.

4.5 A Summary and Description of the Region's Cultural Resources

The Ridge and Valley Province contains significant numbers of sites from all cultural episodes of Pennsylvania's history and prehistory. Given its temperate climate, numerous rivers and creeks, expansive forests, excellent game habitat, extensive agricultural lands, and industrially important raw materials, this portion of Pennsylvania was second only to the southeastern Piedmont in attracting human settlement. The combined efforts of archaeological and historical surveys in the region have resulted in the inventorying of several thousand culturally meaningful sites (see Table 4.3), although the total number of locations in the Ridge and Valley Province potentially of interest (but as yet unrecognized) must number over 100,000.

Prehistoric sites in this area fall into several functional categories. The most imposing sites are the villages, base camps, and farming hamlets that witnessed a gathering of people for extended periods of time. Agricultural villages of the Late Woodland period contain some of the most impressive architectural remains in the area, with housing for up to several hundred people and defensive stockades (e.g., Quiggle, Bull Run, Parker, and Bedford Village). Farming hamlets, a settlement type used throughout the Woodland period, are numerically common and tend to be lineally distributed in the major river valleys or situationally located on prime agricultural land along secondary streams (e.g., Fisher Farm). Base camps were predominately used by hunters and gatherers. These are invariably located in areas where several environmentally attractive features coincide spatially. Because they are at naturally favorable locations, base camps contains evidence of repeated occupations, sometimes covering the entire span of the prehistoric period. Their numerous but chronologically separate occupations resulted in the accumulation of dense concentrations of archaeological material, occasionally spread over large (50+ acre) areas (e.g., Dick's Run).

Encampments comprise a numerically common site type in the region. Small and generally devoid of architectural remains, these sites were used as bivouacs by task groups numbering from one to a few dozen people. Such spots were probably chosen because they provided regular access to a desired resource and/or they were associated with a striking feature of the landscape (rock shelter, stream confluence, spring head, etc.). The Milesburg and Derry sites and the Sheep Rock Shelter are good examples of this type.

Extractive and Processing camps were established at the locations of desired resources, whether stable (lithic quarries, nut groves, or fishing stations) or situational (kill sites and butchering sites). These sites vary considerably in their size and duration of use. The Vera Cruz jasper quarry, for example, may well have been used for 10,000 years, while the occupation span of kill and butchering sites might be measured in minutes.

In contrast to prehistoric site types, historical sites exhibit extensive variability. These structures may, however, be collapsed into eight general categories (Table 4.2).

TABLE 4.2

HISTORICAL SITE CATEGORIES

1. Frontier settlements locations
2. Railroad sites
3. Canal sites
4. Trails, roads, turnpikes
5. Iron industry sites
6. Lumber industry sites
7. Coal industry sites
8. Urban sites

Frontier settlements, usually represented by a farming nucleus and consist of the remains of a settler's home and associated buildings. One of the better-known examples of this type is the Conrad Weiser Homestead located in Berks County. Railroad sites include such features as tunnels, bridges, terminals, station yards, and support facilities such as switching stations and support facilities. Canal sites also include a variety of special function sites concerned with the operation of this transportation system. Tunnels, aqueducts, bridges, towpaths, lockhouses, canal basins, and mule sheds can be found at Union Canal Terminus and Basin, Pine Grove, and Schuylkill. Trails, roads, and turnpikes include remains of roadbeds, highway markers, and service facilities such as toll booths and roadside inns.

Iron industry sites include furnaces, charcoal pits, and associated processing areas, as well as the residences of the administrators and laborers. Similarly, coal industry sites follow the same residential-industry specific site types. In addition to residences the features associated with this activity are tipple mine adits, breakers, and the mines themselves. Lumber industry sites exhibit less variety and consist of logging road and camps.

Due to the variety of specialized services associated with nucleated urban situations a large variety of sites are placed into the category of urban sites. These include:

a) Merchantile/business - general stores, shops, banks, taverns
b) Government buildings - courthouses, jails, borough offices
c) Industrial - mills, factories, utility stations
d) Social/Religious - churches, community halls
e) Residences - company housing, planned community, houses from all socioeconomic classes

Table 4.3 documents the numerical frequency of recorded prehistoric and historic cultural resources within the Ridge and Valley Province on a county by county basis. This table also lists the number of sites which are on the National Register of Historic Places. It is clear that although substantial additions have been made to the site files in the last few years, the number of prehistoric sites recorded is far below the archaeological potential of the region, particularly in a few counties, and that, compared to historic sites, prehistoric sites are underrepresented on the National Register.

4.6 Settlement, Subsistence, and Social Patterns in the Ridge and Valley Province

4.6.1 Cultural Evolutionary Patterns of the Prehistoric Period

In order to evaluate our current knowledge of the adaptations of hunter-gatherers and horticulturalists it is necessary to present in model from our understanding of prehistoric settlement systems on a phase specific basis. Although the data is often limited it is possible to construct tentative models for the three major prehistoric phases: Paleo-Indian-Early Archaic, Middle Archaic-Early Woodland, and Middle Woodland-Late Woodland.

4.6.1.1 The Paleo-Indian/Early Archaic Phase

When man first entered Central Pennsylvania approximately 12,000 B.C. he was faced with the task of adapting to a tundra environment and, by 10,000 B.C., to a Jack Pine-Spruce forest. Unfortunately, aside from six substantial occupation sites (e.g. the Shoop Site), Paleo-Indian remains are only represented by scattered surface finds of fluted points. This is particularly disturbing since from 12,000 B.C. to 10,000 B.C. the change in environmental conditions could have resulted in two distinct settlement patterns for Paleo-Indian hunters and gatherers.

TABLE 4.3

PREHISTORIC AND HISTORIC SITES BY COUNTY

County	Prehistoric In PHMC Site File	On National Register	Historic In PHMC Site File	On National Register
1. Bedford	144	0	29	19
2. Berks	546	0	86	45
3. Blair	34	0	28	11
4. Carbon	37	0	16	9
5. Centre	257	2	113	49
6. Clinton	163	0	45	4
7. Columbia	9	0	16	25
8. Cumberland	98	0	57	16
9. Dauphin	125	1	91	28
10. Franklin	198	0	108	33
11. Fulton	56	0	10	3
12. Huntingdon	89	0	48	4
13. Juniata	90	0	8	6
14. Lackawanna	0	0	28	15
15. Lebanon	361	0	125	24
16. Lehigh	155	0	60	26
17. Luzerne	61	0	51	16
18. Lycoming	181	1	75	11
19. Mifflin	67	0	16	4
20. Monroe	39	0	76	14
21. Montour	57	0	19	2
22. Northhampton	119	0	91	30
23. Northumberland	105	0	36	12
24. Perry	35	0	12	11
25. Schuylkill	45	0	39	12
26. Snyder	45	0	25	5
27. Union	24	0	61	14
	N=3140	N=4	N=1369	N=448

Excavated sites from the most southern sections of the Ridge and Valley Province by Gardner (1974, 1976) and Carr (1975) identify a complex of functionally specific sites occupied from 9,000 B.C. to 6,000 B.C., which consists of a quarry, quarry reduction station, and a quarry-related base camp. In addition to lithic procurement and reduction sites, food procurement sites have been located in upland areas as well as on the edges or overlooking floodplain zones. These settlement pattern components suggest that Paleo-Indian hunters were not nearly as mobile as has been proposed (Witthoft 1952), but occupied home ranges which contain resource locations visited on a regular or semi-regular basis.

Group size and composition may have been analogous to those of the Eskimo documented by Balikci (1968). This pattern entails a process of fission and fusion on a seasonal and activity related basis. Fitting's (1966) intra-site analysis of the Holcombe Site postulated that groups were composed of multiple nuclear families residing together at certain periods during the year. Specialized activities at upland sites, for instance, and seasonal variations in resources may have dictated alternate forms of band composition involving fewer nuclear families.

4.6.1.2 The Middle Archaic-Early Woodland Phase

By 5,000 B.C. the modern forest consisting of a mixed conifer-northern/deciduous forest was essentially in place. At this time it is hypothesized that the multiple base camp/radial pattern secondary site model was established. Groups of maximal size would position camp locations in valley floor locations so as to maximize access to multiple resource zones or distinct microenvironmental settings. At these localities the full range of domestic activities would occur, as well as final crafting of nonsubsistence products such as leather, wood, and stone.

Located away from the main base camp on the valley floor, along the mountain slopes and adjacent to second- and third-order streams, are smaller camps of specialized function. These localities could have been occupied by small task groups involved in hunting and gathering and the preliminary processing of foodstuffs. Assemblages at these sites are represented by a reduced frequency in the number and frequency of tool types and by only minor evidence of tool manufacture.

Upland regions were exploited from small sites located near spring heads. These sites are the most temporarily occupied of all sites, with assemblages representing minor tool maintenance behavior and the discard of broken items. The small sets of individuals inhabiting these sites were most likely involved in higher-risk hunting pursuits.

During the course of a single year hunter-gatherer populations may have established this radial settlement pattern at several locations in a valley system, with smaller order sites on the valley floor and upland areas being inhabited in response to seasonal resource occurrences. The base camp itself may also have been a seasonal phenomenon (spring-fall), with the maximal group fissioning into smaller groups during the less productive winter season.

During the Archaic Period various trends and their effects on the settlement system are noticeable. A slowly increasing population probably resulted not only in smaller home ranges but greater resource depletion of preferred items (e.g., deer) through indirect competition. As a consequence, smaller animals may begin to be a more frequent component of the diet, possibly resulting in the lower frequency of upland hunting camps which were initially established for deer exploitation. The slow infiltration of new species of flora and fauna over this period may also have resulted in subtle shifts in the settlement pattern as the micro-environments for these new items were established.

4.6.1.3. The Middle Woodland-Late Woodland Phase

With the inception of horticulture in the earlier stages of the Woodland Period major shifts can be documented in the settlement pattern. Two new forms of sites appear during this phase: farming hamlets and villages with or without stockades. The interrelationship between these two site types are not clearly defined, but several hypotheses may be suggested on the basis of current knowledge.

Present survey data shows that larger stockaded villages are very late phenomena and are located along the major water courses and in association with the more productive agricultural soils. The residence of 200-300 people at these localities was probably year round for at least a portion of the population. The smaller farming hamlets tend to be located away from major watercourses along second-order streams and represent the habitation of several extended family units on a seasonal basis. These units may reflect seasonal partitioning of larger village populations during the later phases. Early in the Late Woodland phase these sites may reflect a dispersed hinterland population which had only slightly modified the earlier hunter-gatherer adaptation. Farming hamlets may have been semi-permanent occupations with the families reverting to the hunting and gathering strategy of exploitation during other seasons.

Irrespective of the interrelationship between hamlets and villages, the basic radial settlement model continues to apply with these permanent or semi-permanent settlement types replacing the seasonal base camp. Special purpose hunting and gathering localities were located in valley floodplain and upland regions. Late Woodland lithic assemblages are comparable to those of earlier occupations in tool diversity and reflect an equivalent pattern of reduction and tool maintenance behaviors.

4.6.2 Cultural Patterns of the Historic Period

A review of the historical development of the Ridge and Valley Zone follows. It will be noted that the accelerated degree of economic development and urbanization found in some other areas of the state is noticeably lacking in the Ridge and Valley Zone. This is largely due to the heterogeneous topography, and is the pervasive factor in all the themes of the historical study unit. In many places, the Ridge and Valley Zone looks much like it did when first settled 250 years ago. It was a place people often passed through in order to get somewhere else.

Four thematic units are examined, and each is explained chronologically as a dominant factor in the historical cultural development of the area: transportation and commerce, industry, agriculture, ethnic diversity.

4.6.2.1 Transportation and Commerce

The Allegheny Mountains, part of the Appalachian system, proved a formidable barrier to the settlement of the "Old West" in the eighteenth century. The mountains challenged contemporary forms of transportation and often impeded settlement and economic development until newer means of travel were devised. Even today, many valleys and coves in the Ridge and Valley Zone are accessible only by secondary roads or improved trails. The first immigrants to the area either walked or used pack horses on established Indian trails which led through the many gaps in the mountains. Streams and rivers were also followed as far west as possible, especially using the Juniata River and the West Branch of the Susquehanna. Immigrants traveling south and west followed the valleys which conveniently curved in that direction. The main corridor was the Great Valley, lying between South and Blue Mountains. It led people to the cheap fertile lands of the Shenandoah Valley of Virginia and North Carolina.

As Pennsylvania became a colony and then a state, the difficulties of transporting people and goods between its two largest towns, Pittsburgh and Philadelphia, became apparent. Ferries provided river crossings, such as John Harris' ferry across the Susquehanna established in 1732. Roads such as Forbes Road, built in 1758 during the French and Indian War, cut through the wilderness. These did little to alleviate the problems of crossing the steep ridges. The State chartered many roads and turnpikes to be built in the early nineteenth century, but these were primarily in the southeastern portion of the state, the area with the highest population.

The first concerted effort by the state government to alleviate transportation problems in the Ridge and Valley Zone began with the construction of canals in the first quarter of the nineteenth century. By 1850, thousands of miles of canals crisscrossed the state. The Pennsylvania Canal had several divisions, among them the Juniata and West Branch divisions. One of the most unique and unusual solutions in the nation to crossing the Appalachians was developed during this time, the Portage Railroad. People and goods were taken by the Pennsylvania Canal to Hollidaysburg, where the canal boats were loaded onto flat rail cars and hauled by mule (later steel cabling) over a series of inclined planes which would take them through the steepest part of the journey, Allegheny Mountain. Once over, they would then be placed back into the canal to continue the journey westward.

During this era there was also a flurry of bridge building, especially over the major waterways. Pennsylvania is well-known for its covered bridges, most of which were constructed in the early nineteenth century. The bridges were covered, or roofed, in order to protect the roadbed of wood from rapid deterioration. Theodore Burr, a Pennsylvania bridge builder and inventor of the Burr Truss, was active at this time. One of his most famous creations was the Camelback Bridge spanning the

Susquehanna at Harrisburg. Charles Dickens, traveling through Pennsylvania in the 1840's on a lecture tour, wrote about the canal system and the Camelback Bridge. Montour County has the greatest number of covered bridges still standing in the state.

The Portage Railroad and the canal era were short lived. The advent of railroads brought about a rapid change in the transportation system. Railroads became the dominant form of transportation in the Ridge and Valley Zone and the state between 1860-1920. The Pennsylvania Railroad was chartered in 1846 to build a railroad between Harrisburg and Pittsburgh. It was completed six years later. This soon developed in an extensive network, with many shorter lines stretching all over the state. Altoona became a major construction center and a terminus. Railroads developed gradients and inclines as a means of crossing the Alleghenies. Horseshoe Curve, near Altoona, is still used today and is regarded as one of the great engineering feats in the United States. The first tunnels through the Alleghenies were also constructed in the 1880's for railroading purposes.

After the turn of the century, an improved road system and the automobile emerged, enabling fast and efficient access to the most remote parts of the state. This road system reached its zenith with the completion of the Pennsylvania Turnpike in 1940, the first of its kind in the nation. The first section of it was built in the Ridge and Valley Zone, from Harrisburg to Irwin. The turnpike utilized many of the tunnels through the Alleghenies which had been abandoned by the Pennsylvania Railroad.

The airplane, by the 1920's, was also responsible for the demise of the railroads. The Alleghenies were known as the "Hell Stretch" or "the Graveyard" by early fliers because of potentially dangerous weather and wind conditions. Bellefonte Flying Field was a stopover for airmail pilots during 1915-1935. Improved air technology has today eliminated many of such problems with crossing the Alleghenies.

4.6.2.2 Industry

The history of industrial development in the Ridge and Valley Zone is illustrated by the exploitation of its natural resources of iron, coal, and timber.

The earliest successful industry in Pennsylvania was iron mining and manufacturing. Iron ore reserves discovered in the mid-eighteenth century provided the colonies and England with the raw materials for armanents, household, and community needs. Manufacturing communities grew at various places in the Ridge and Valley Zone, such as Cornwall (Lebanon County), Curtin Village (Centre County), Greenwood Furnace (Huntingdon County), and Hopewell Village (Berks County). In addition, numerous isolated furnaces dotted the Ridge and Valley landscape. Pennsylvania was the nation's chief source of iron before 1860. Today the iron industry is practically non-existent in the state, largely due to the depletion of reserves and the discovery of other reserves in the western United States.

Coal in the state went largely unused until its use as a fuel for steam locomotion and the blast furnaces of the steel industry. From the mid-nineteenth century to today, the longer burning anthracite coal has always been in high demand, encouraging the exploitation of the vast resources of the Ridge and Valley Zone. Unlike bituminous coal, anthracite is not found near ground surface, necessitating deep shaft mining. Because of this, Pennsylvania became a world leader in deep mining technology. The growth of the industry and the need for miners caused a population increase in the coal areas of the Ridge and Valley Zone. By 1880, large mining communities had sprung up, including Scranton, Wilkes-Barre, Hazleton, Minersville, and others. Familiar scenes on the landscape included the breaker, the building used for processing coal; the slate dump; and company-owned towns containing simple frame dwellings to house the miners. From the earliest use of coal in America to the present, Pennsylvania has always been the nation's leading producer of anthracite coal.

Abundant reserves of iron ore and coal also made Pennsylvania, at one time, a world leader in steel production. Large-scale production became possible in the 1860's and 1870's with the introduction of the Bessemer process. The Ridge and Valley Zone's close proximity to coal and iron reserves made steel production possible at such places as the Pennsylvania Steel Company, Steelton; the Freedom Iron and Steel Works, Lewistown; and the Bethlehem Steel Company, Bethlehem. The Bethlehem Steel Company is currently the nation's second largest steel manufacturer, though production has declined in recent years with the introduction of cheaper foreign steels.

In the eighteenth century, lumber from the forests of Pennsylvania was largely used in the manufacture of charcoal for iron foundries and in ship, home, and furniture construction. In the nineteenth century, this need had grown so great that, by 1860, Pennsylvania was the nation's leading supplier of lumber. Though most lumbering activities took place in the extensive forests of the Allegheny Plateau, the mountains of the Ridge and Valley zone were also heavily timbered. Logs were felled in isolated areas, dragged by wagon teams or narrow guage railroad to the nearest river, where they were loaded on rafts and floated downstream. The West Branch of the Susquehanna River and Williamsport were the center of log shipping activities. The Susquehanna became famous as a logging river.

As loggers had to travel to the forest, logging camps and mills were temporary structures. Larger, more permanent sawmills were often constructed along riverbanks. After 1870, Pennsylvania was overtaken by other states in log production, largely because the forests were replenished in the era before governmental controls. Pennsylvania never recovered its former glory, and the last rafts on the Susquehanna disappeared at the turn of the century. Today localized sawmills are the only reminders of the industry.

4.6.2.3 Agriculture

The first settlers in the Ridge and Valley Zone came for the purposes of tilling the soil, something they had done in Europe. The soil in the area was not as good as the fertile limestone soil of southeastern Pennsylvania, but productive farms could be developed nonetheless. The most successful farms were in the valleys along the rivers and creek beds, which contained fertile topsoil.

The earliest farms in the Ridge and Valley zone were nearly self-sufficient family units. The first few years on the land were always devoted to subsistence farming, but as yields improved, crops were put up for sale or barter. The earliest crops grown were wheat and corn, with corn becoming the dominant marketable item. Wheat is highly perishable and does not transport easily. Corn, however, is more versatile and can be easily dried as feed or converted into liquor for shipping to market. Because of the difficulty of transporting goods across the mountains, most early settlers of the Ridge and Valley Zone with access to the Susquehanna River shipped their products downriver to Baltimore. Heavy trade with Philadelphia and Pittsburgh did not develop until the advent of canals and railroads. Other early crops included fruit, especially apples and peaches.

Until about 1870, farming in Pennsylvania and in much of the nation was performed with hand tools and labor. After this time, mechanized tools, such as the McCormick Reaper, the iron plow, the lister, and combined rake made farming faster and more efficient. In the 1920's the tractor began to replace horses, though not among the Mennonite sects in the Ridge and Valley Zone.

Today the Ridge and Valley Zone is still largely composed of farms, with very little expanding urbanism, as in the eastern and western ends of the state. The farms are often still single family units, with the primary buildings being a house, barn, and numerous small outbuildings.

4.6.2.4 Ethnic Diversity

Pennsylvania is well known for its cultural pluralism. William Penn actively encouraged different ethnic groups to settle here as a "Holy Experiment" under the doctrine of religious toleration. Though these groups lived side by side, they often did not interact, preferring their own kind. Several waves of immigration have led to the ethnic diversity in the Ridge and Valley Zone.

The first persons to enter the Ridge and Valley Zone with the intent of settling it were Palatine Germans. They traveled as a unit, and by the 1720's had settled in the Tulpehocken Valley in Berks County. They were followed shortly afterward by Scotch-Irish Presbyterians from Northern Ireland. These people traveled in single family units and were usually the first to clear the land and establish the first towns and churches in an area. The Scotch-Irish were often squatters, and when the land they had cleared became sterile, they preferred to move on to other uncultivated lands. The structures they built were often temporary log ones.

As the Scotch-Irish moved on, they were replaced by German sect groups, specifically Mennonites, Dunkars, Schwenkfelders, Moravians, and others. Though most of these inhabit southeastern Pennsylvania, many have established settlements in the Ridge and Valley Zone. The Germans built sturdier structures, usually of stone or brick, and introduced crop rotation which kept the land fertile. Because of their religious philosophy, the sect groups do not use electricity or any mechanized tools in their farm work. Today their way of life is relatively unchanged from that of the time they first settled the area.

From 1830 to 1880 large numbers of Irish emigrated to the United States because of economic and religious conditions in Ireland. By the time of their migration the frontier had passed westward out of Pennsylvania and there were no new lands to accommodate the bucolic Irish. They therefore largely settled in the urban areas of Pennsylvania, primarily Philadelphia and Pittsburgh, which needed labor for their growing industries. In the Ridge and Valley Zone, the Irish were employed by companies constructing the state's canals and railroads, and by coal rims in the anthracite region, especially the Scranton and Hazleton area. Toward the turn of the century, the anthracite region also became well known for receiving Slavic and Italian immigrants to work in the mines.

4.7 An Evaluation of the Present State of Historical and Archaeological Knowledge in the Ridge and Valley Province of Pennsylvania

Contemporary social scientific research, with its orientation towards cultures as integrated wholes worthy of study in their entirety, entails a host of research problems. The scientific investigation of these problems employs models of past cultural systems which are refined and articulated through research. The goal of research is to provide verifiable behavioral inferences about the past. In this section we will enumerate some of the research problems of interest to the area's archaeologists and historians and examine the degree to which solutions to these problems are obtainable given the data and resources currently at our disposal.

The following research topics represent some of the issues of interest to social scientists in the region. Some of these topics are of perennial concern, dealing with general processes of cultural evolution, while others are narrower or more methodological in scope.

1. Environmental reconstruction. Since cultural ecologically based research centers around man-environment relationships, this topic relates to all others to varying degrees.

2. Ceramic and lithic typology. The chronological and ethnic utility of artifact "types" needs to be examined for each local area.

3. Lithic technology, use-wear analysis, and sourcing. Lithics research is still a growing field in archaeology, through which a number of important questions concerning site function, settlement systems, and trade can be addressed.

4. Alternate methods of dating--e.g., the hydration of flints. The principles regulating obsidian hydration also pertain to flints and jaspers. Local materials could contribute to the development of the technique.

5. The adoption of agriculture. The cultural changes brought on by the transition to agriculture are poorly known in this region.

6. The reconstruction of social organization. Through settlement system studies, mortuary analyses and other means, phase-specific models of social organization can and must be tested.

7. Demographic reconstruction. As population change was a likely catalyst of important cultural changes, demographic studies are of critical important for the region.

8. Adaptive variation in Hunter-Gatherer and Tribal societies. This region contains large numbers of varied examples of these forms of society. Why did this variation exist? The archaeological record is well preserved and potentially quite valuable in answering this question.

9. The analysis of local industry. Lumbering, mining, and production towns are commonplace in this region and provide excellent opportunities for research concerning the life-styles of their inhabitants and the interaction between local industry and the marketplace.

Section 4.3 of this report has briefly summarized the nature and current status of historical and archaeological research in the Ridge and Valley Province. At present, topics 2 and 6 above (artifact typology and social organizational reconstruction) come the closest to achieving acceptable levels of research in the area, although even with these more local studies are warranted and necessary. The disciplines of archaeology and history have experienced rapid growth in recent years, defining new problems and developing methods for their solution. The result is that topics 1, 3-5, and 7-9 each contain a number of research questions of considerable importance which are presently unanswered.

The current body of data available for historical and archaeological research in the Ridge and Valley Province is insufficient to address most of the research questions of concern. The reasons for this stem from the following:

a) an insufficient amount of certain kinds of data.

b) The disorganized and variable content of much of the data we do have.

An example of the kind of missing data that is important to current research interests is the information on settlement system surveys (i.e., the comprehensive inventory of all prehistoric or historic sites in a culturally meaningful geographical region). Current survey practices in the region can be classified as either systematic but narrowly focused (most contract surveys), systematic but dispersed (like those conducted by the recent "regional archaeologist" program), or haphazard (sites reported by citizens, SPA members, etc.). Not even the river basin surveys (those of Smith, Turnbaugh, and Michels) purport to be complete inventories. Without complete surveys the demographic and economic changes witnessed by a region through time are difficult, if not impossible, to explain. Another example of the kind of data whose absence is hindering research is that on local environmental reconstructions based on pollen, macro-botanical, and soils research.

The second major hindrance to research progress is disorganization in the existing data base. A paramount example of this is the PHMC archaeological and historic site files. Potentially among the most useful tools for research, they suffer from variable information, a lack of accessibility (indexing, data retrieval), and the absence of a program to monitor the current status of the sites they contain. Current PHMC programs are aimed at remedying some of these problems (e.g. computerization of site file information).

Section 4.9 contains a discussion of measures that, if implemented, would significantly improve preservation efforts and research opportunities in Pennsylvania.

4.8 Potential for Impact on Archaeological Resources in the Ridge and Valley Province

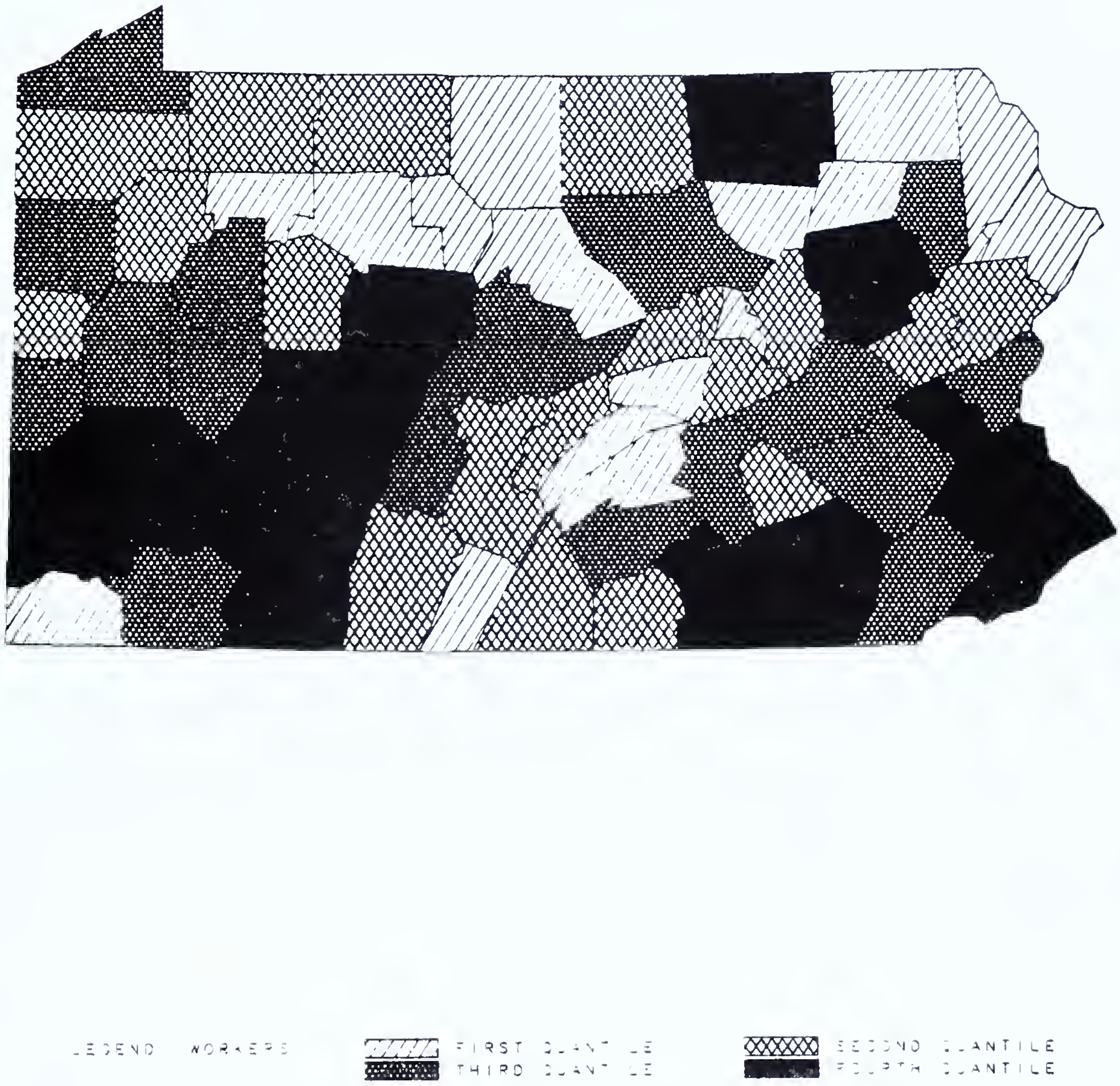
In order to make reasonable predictions regarding those activities within the Ridge and Valley Province of Pennsylvania which might adversely affect archaeological sites, it is necessary to develop variables which will reflect the relative levels of severity of soil-disturbing operations. These activities include, but are not limited to: mining, resource exploitation, urban development, transportation, flood control, and special (non-urban) developments. Although an attempt was made to compile data for each activity and county (such as building permits or the amount of mining) it was found in every case that this type of information was difficult to locate. Therefore, an alternative approach was adopted. The logical assumption was made that the level of employment is each county for the industries of mining and construction directly correlates with the level of ground-disturbing activities. Employment in mining and construction in a given county may be assumed to correlate with potential impact if it is accepted that the level of employment is one indicator of the health and activity of an industry. It was then possible to produce province-wide or state-wide expectations about the possible future impact on archaeological sites of those two most significant ground-disturbing industries.

Two types of analyses were conducted in order to calculate: 1) the gross number of workers in each county relative to the rest of the counties in the state and province, and 2) the expected number of workers in mining and construction for each county, controlling for the size of its population. In this way it is possible to obtain some understanding as to both the overall and relative levels of activity potentially affecting archaeological sites and to point out those counties which seem most likely to be in greatest danger of threats to the remaining archaeological sites within their borders. It should be noted here that no assessment of the actual distribution of sites was made. Instead the view that archaeological sites are ubiquitious and evenly distributed was adopted. Of course, this is not realistic and a refinement of the results presented could be made through the weighting of county areas with the number of known or expected sites in their domain.

Figure 4.4, the ranked percentages of workers in mining and construction in Pennsylvania, is designed to show four groups. The first quantile contains those counties which rank in the lowest 25 percent in

FIGURE 4.4

Ranked Percentages of the Population, by County, in Mining and Construction in The Commonwealth of Pennsylvania



DATA FROM PA COUNTY DATA BOOK 1982

workers per capita. Subsequent quantiles are similarly divided so that finally, the fourth quantile contains counties whose population of workers per capita ranks in the highest quarter.

Not unexpectedly, counties such as Philadelphia and Allegheny, with high population levels, also contain the highest number of workers. In fact, population levels are very highly correlated with the number of workers in construction (again not unexpected), while the number of workers in mining is not very well correlated with population levels. Combined, however, they still maintain a correlation level of r = .9158 (.0001). This fact will be used in the subsequent step of analysis. A list of those counties and their grouping is illustrated in Figure 4.5 and listed in Table 4.4.

The Ridge and Valley Province, while exhibiting the full range of groups, has slightly more counties in the lower half of the distribution.

The next step of the analysis begins with the graph of the regression of logged data of workers versus population (Figure 4.6). Confidence limits of 95 percent were established and used to determine which counties fell 1) below, 2) within, and 3) above the expected number of workers per capita. Figure 4.7 shows a very different pattern from the previous maps with larger than expected values falling in the western part of the state, in particular. Larger than expected values may often be explained by the presence of increased mining activity in those counties containing coal, oil, or other minerals not evenly distributed across the state. There are exceptions to this, however, and those found in the Ridge and Valley Province are discussed below.

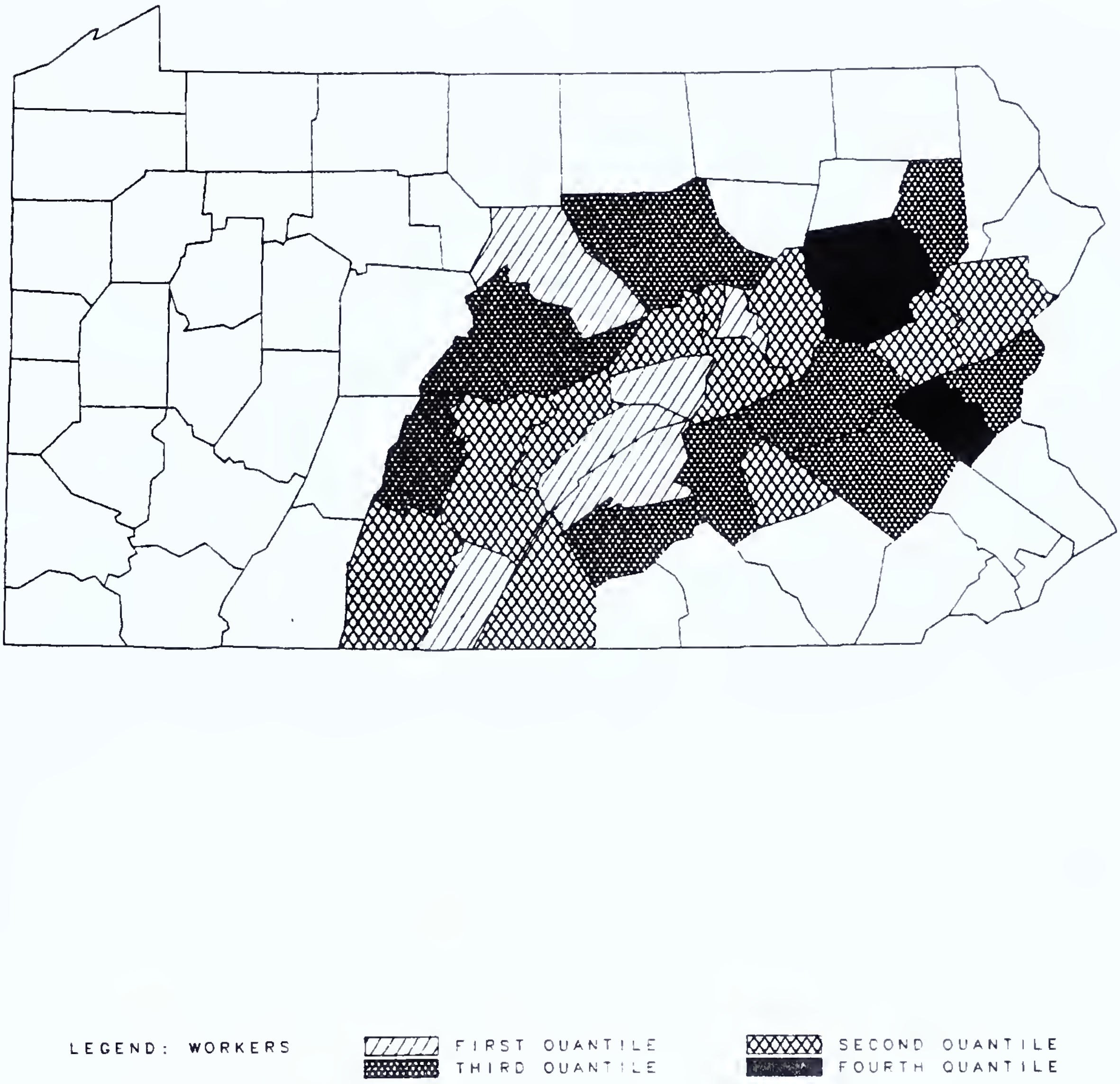
In the Ridge and Valley Province the expected relative number of workers per capita is reiterated in Figure 4.8 and listed in Table 4.5.

Again, the list appears skewed, but more importantly for the province, it is not the counties with large numbers of miners which cause greater numbers of workers per capita than expected. Centre County is the location of The Pennsylvania State University which possibly generates more construction work than the average. Monroe County contains numerous resort areas in the Pocono Mountains, perhaps the cause of higher rates of construction. Fulton County maintains the same number of miners and construction people as Greene County which has below the expected number of workers, however, the population of Fulton County is less than one third of Greene county. No explanation for this ratio is presented at this time. Finally, Huntingdon County does have a relatively large number of workers in both fields, but again, no explanation is suggested.

In summary, Luzerne and Lehigh counties are, in absolute terms, the most likely counties within the Ridge and Valley Province to see impacts on archaeological sites because of their large populations. However, when the size of the population is controlled for, Centre, Monroe, Fulton, and Huntingdon counties appear to have the potential for greater per capita destruction of archaeological data.

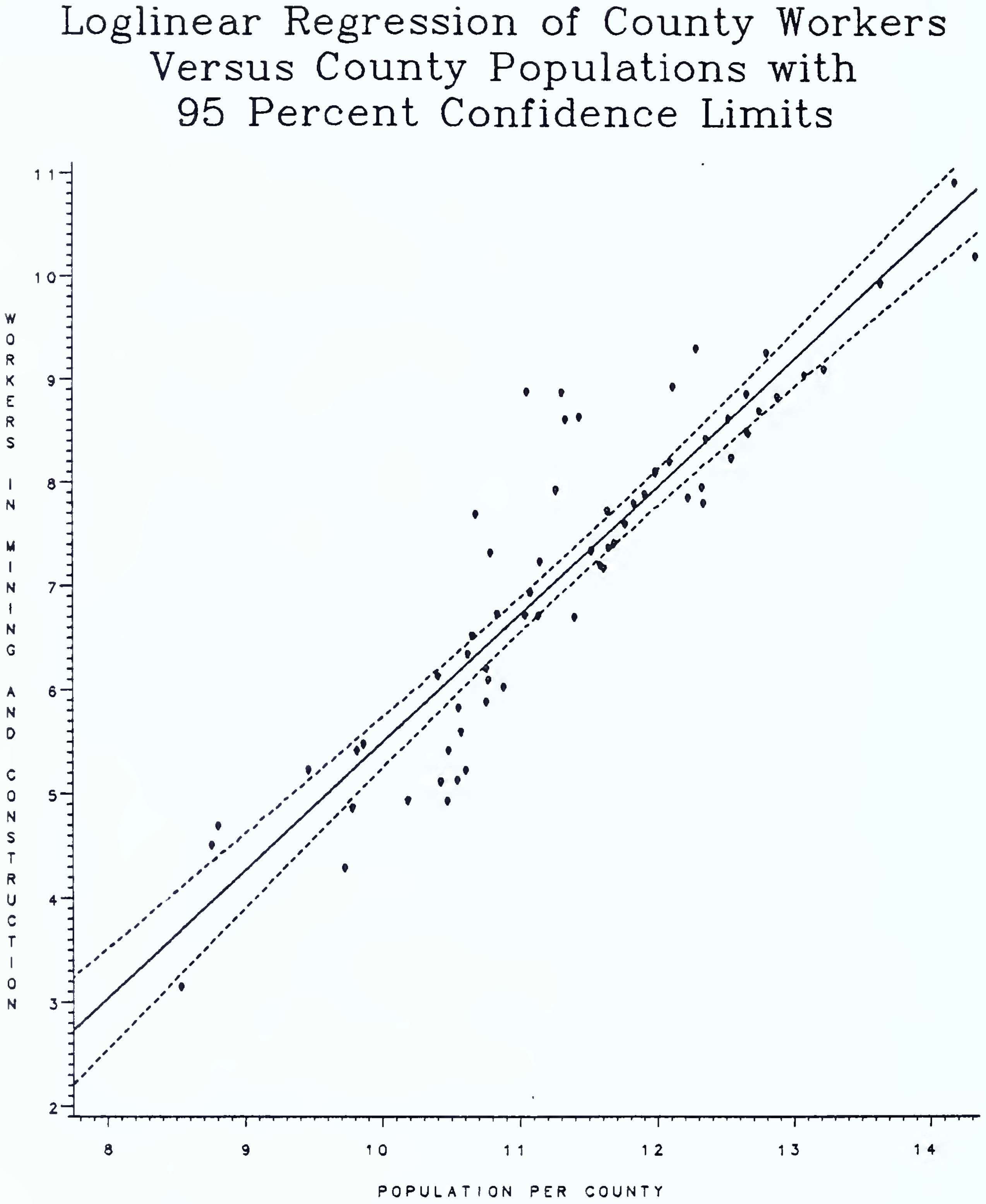
FIGURE 4.5

Ranked Percentages of the Population, by County,
in Mining and Construction in
The Ridge and Valley Province of Pennsylvania



DATA FROM PA COUNTY DATA BOOK 1982

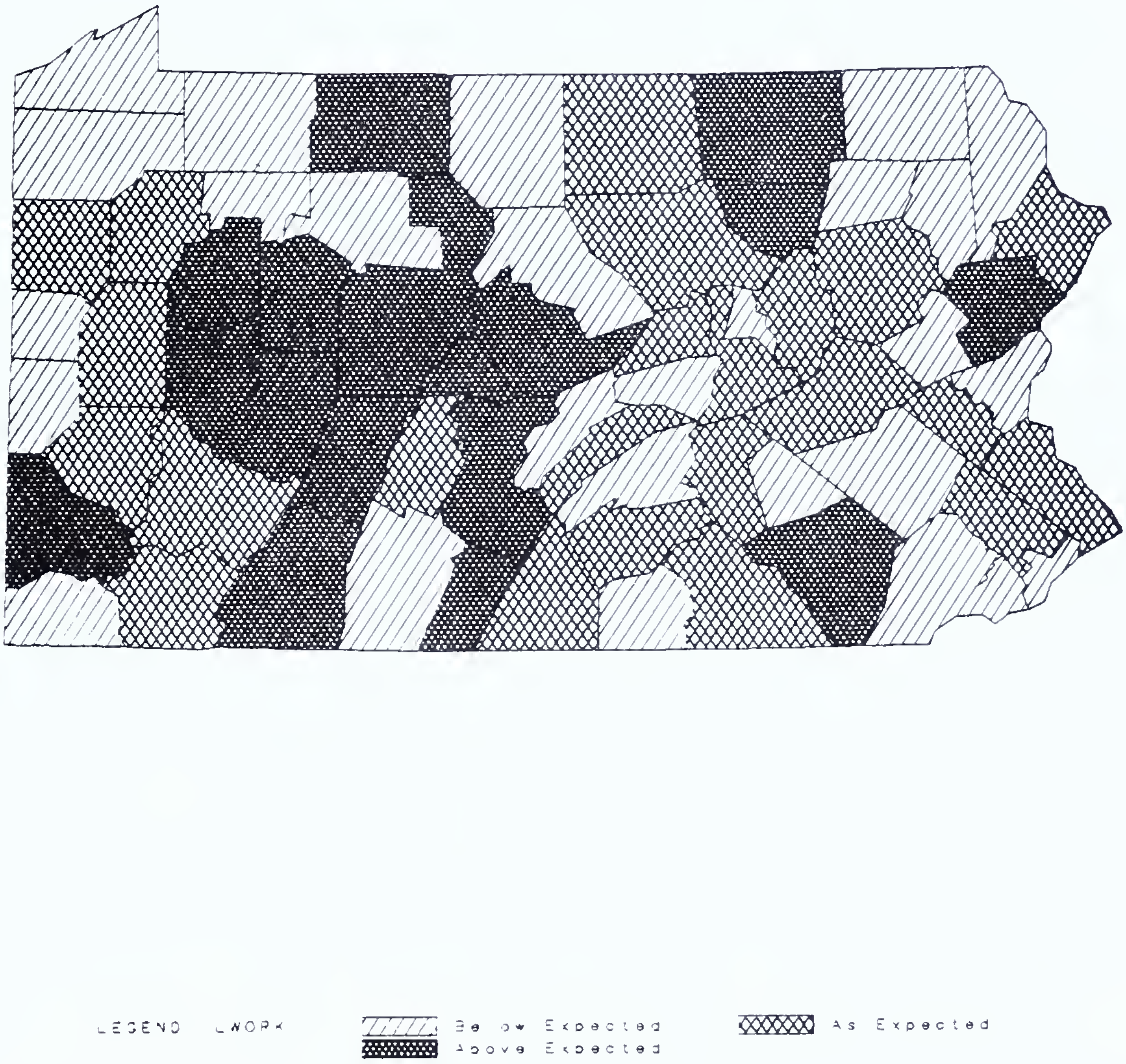
FIGURE 4.6



DATA FROM PA COUNTY DATA BOOK 1982

FIGURE 4.7

Workers Per Capita, by County,
in Mining and Construction in
The Commonwealth of Pennsylvania



DATA FROM PA COUNTY DATA BOOK 1982

FIGURE 4.8

Workers Per Capita, by County, in Mining and Construction in The Ridge and Valley Province

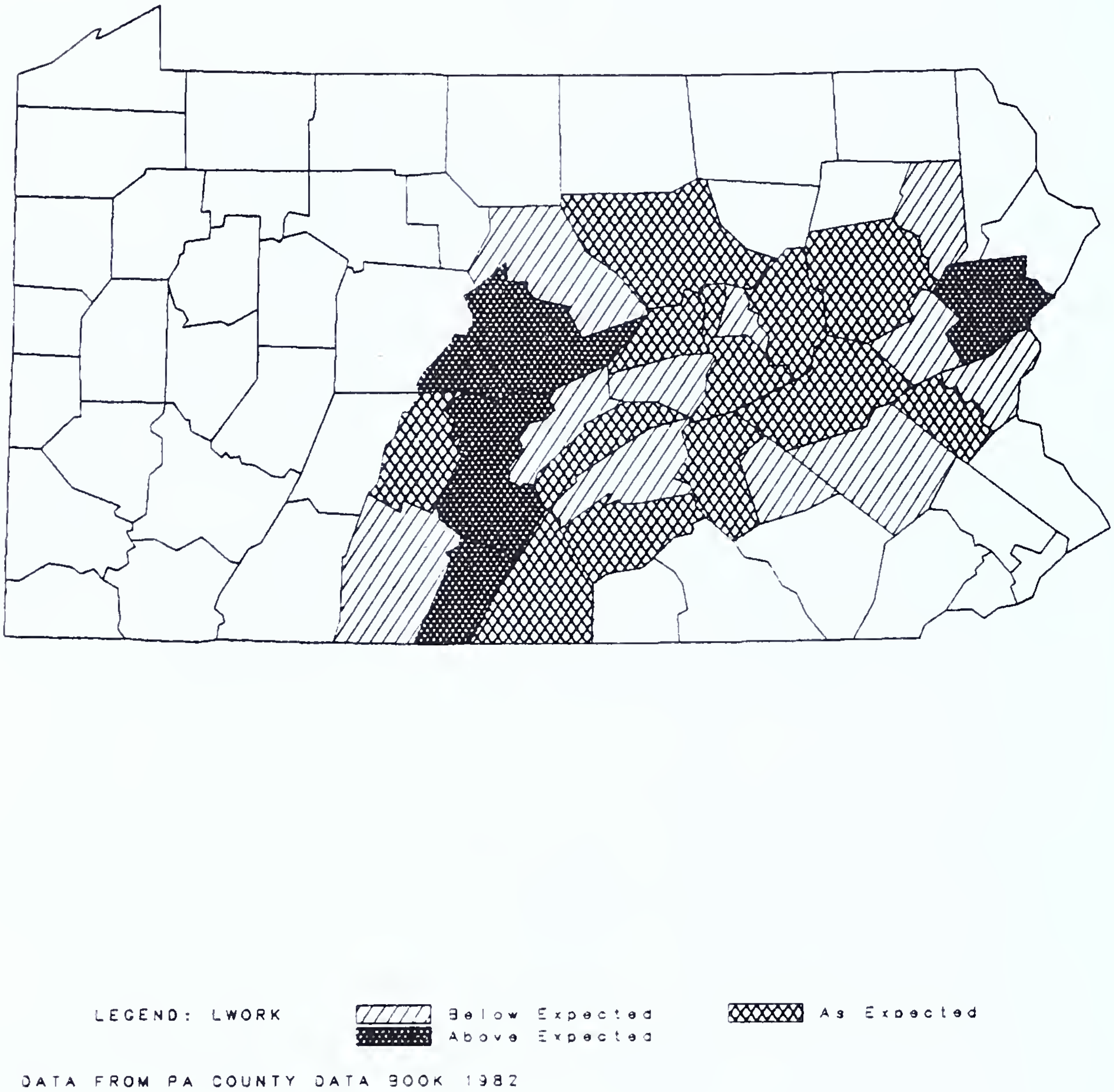


TABLE 4.4

THE GROUPED PERCENTAGES OF WORKERS IN THE RIDGE AND VALLEY PROVINCE

First Quantile (0-25%)	Second Quantile (26-50%)	Third Quantile (51-75%)	Fourth Quantile (75-100%)
Clinton	Bedford	Berks	Lehigh
Fulton	Carbon	Blair	Luzerne
Juniata	Columbia	Centre	
Montour	Franklin	Cumberland	
Perry	Huntingdon	Dauphin	
Snyder	Lebanon	Lackawanna	
	Mifflin	Lycoming	
	Monroe	Northhampton	
	Northumberland	Schuylkill	
	Union		

TABLE 4.5

PRESENCE OF WORKERS PER CAPITA IN THE RIDGE AND VALLEY PROVINCE

Less than Expected	Expected	More than Expected
Bedford	Blair	Centre
Berks	Columbia	Fulton
Carbon	Cumberland	Huntingdon
Clinton	Dauphin	Monroe
Lackawanna	Franklin	
Lebanon	Juniata	
Mifflin	Lehigh	
Montour	Luzerne	
Northhampton	Lycoming	
Perry	Northumberland	
Snyder	Schuylkill	
	Union	

4.9 General Policy Recommendations

The following recommendations are offered as a basis for improving historic preservation efforts and the quality of historical and archaeological research in Pennsylvania.

1. To promote an active and progressive program in Cultural Resource Management, the staffing and facilities of relevant Bureaus of the PHMC should be expanded.

2. Encouragement is needed to increase the number of sites nominated to the National Register.

3. Computerization of the state's historic and archaeological site files is long overdue. Plans should provide for graphics capabilities.

4. More financial support is needed for county or regional site recording surveys (such as the Centre County Registration Project). In prehistoric site surveys, emphasis should be placed on comprehensive surveys of restricted but culturally and geographically relevant areas. The results of these surveys will complement existing site file data and the results of future contract surveys, and will allow for sorely needed settlement system analyses.

5. Researchers should be encouraged to use the collections of the PHMC at the William Penn Memorial Museum (WPMM).

6. Additional space and curatorial personnel should be provided at the WPMM so that more significant private collections of material can be donated to the state.

7. The support of the Pennsylvania Archaeological Council is needed for the definition of significant research projects and the writing of scopes of work.

8. A consistent and appropriate level of funding for archaeological and historical conservation and research efforts should be provided by the PHMC.

9. The Society for Pennsylvania Archaeology should take a more active role in site monitoring and comprehensive site survey.

10. Research proposals are needed that address topics of genuine social scientific value for funding by the PHMC and other sources.

11. There is a need to train amateurs in historical site surveys, and to keep discovered sites monitored and updated.

12. Amateurs must be trained in manuscript collections research. This would be especially helpful when searching land titles, property deeds, and information on the families which inhabited historic archaeological sites.

13. There is a need to train amateurs to recognize possible unrecorded historical sites and structures, and to train them in the recording of those sites.

14. Typologies for historical site artifacts (glass, ceramics, metal, wood) need to be developed and taught to persons recording sites. This will facilitate the dating of such sites.

Two steps that can be taken to preserve sites and site information in the Ridge and Valley Province are 1) site survey (recording) and 2) nomination of known sites to the National Register. While these are not unrelated operations, they are often conducted at different times (sites may be known for years before being nominated) and they may be thought of a resulting in somewhat different types of information. Site surveys address questions related to phase-specific settlement patterns, while nominating sites to the National Register involves functional information useful in settlement system analysis. Both of these are important data-collecting operations in archaeology and history and at the same time they contribute to site preservation efforts.

We would like to propose here an objective basis for allocating financial resources for archaeological and historical survey and nomination programs in the region. The premises for this plan are as follows:

a. Counties with very low numbers of recorded sites should be subjected to site survey operations.

b. Counties with high numbers of recorded sites should be subjected to site nominating operations.

c. Counties most likely to receive destructive impacts in the near future more urgently require operations a and b.

By combining information on the number of recorded historic and prehistoric sites (Table 4.3) with information on the likelihood of destructive landscaping by county (Tables 4.4 and 4.5), we can graphically represent the spatial aspects of these three premises.

Table 4.6 illustrates our recommendations for archaeological survey and nominating operations. The number of sites recorded by county has been shown earlier to vary greatly (0-546) (following Smith and Herbstritt 1977, revised 1983). These counties actually fall into three natural groupings: Low (0-67 sites), Medium (89-163), and High (181-546). As can be seen from the row totals on the table, 13 of the 27 counties in the Ridge and Valley Province have 67 or fewer total recorded sites. This is an abyssmal state of affairs given that one can conservatively estimate that no county in Pennsylvania could possibly have fewer than 1,000 prehistoric sites in its borders. As of 1977 only three counties had 180 recorded sites, as of 1983 only 5 counties had that number, a statistic that begins to instill some sense of representativeness. Centre County, with 89 in 1977, now has 257 recorded sites so it is listed twice in the table. Other county totals have changed since 1977 as well, but the totals are, in general, consistent with the situation six years ago.

TABLE 4.6

PREHISTORIC SITES: RECOMMENDATIONS FOR SURVEY AND NOMINATION OPERATIONS

SURVEY	HIGH URGENCY	IMPACTS	LOW URGENCY
	HIGH	MEDIUM	LOW
Low	Luzerne Fulton Monroe	Blair Lackawanna Schuylkill	Carbon Columbia Mifflin Montour Perry Snyder Union
Medium	Huntingdon Lehigh	Cumberland Dauphin Northampton	Bedford Clinton Juniata Northumberland
High	Centre	Berks Lycoming	Lebanon Franklin
NOMINATION	HIGH URGENCY		LOW URGENCY

We contend that the counties with low site totals should differentially receive archaeological survey attention. Within this group Monroe, Luzerne, and Fulton are particularly deserving of immediate survey efforts since construction impacts will more rapidly effect these counties.

At the other extreme, Centre, Berks, Lycoming, Franklin, and Lebanon counties should be the focus of intensive National Register nomination activities and excavation. These five counties contain the vast majority of all sites known to exist in the region. Incredibly, only three of the approximately 1,540 prehistoric sites recorded in these counties currently have the protection of the National Register. This is a grossly unwarranted state of affairs. One could argue that these counties will ultimately provide our best information on settlement patterns and settlement systems. Yet Centre County is also in the category of highest per capita construction, hence its data base is eroding rather rapidly.

In conclusion our recommendation is that, all other things being equal, the area's archaeological research will be best served in the short run if survey efforts can be concentrated in Monroe, Luzerne, and Fulton counties and nomination and excavation efforts are concentrated in Centre, then Berks and Lycoming counties.

The same procedure has also been applied to historic sites (Table 4.7). The number of historic sites also fall into three natural groupings: Low (10-29), Medium (36-86), and High (91-125). Although the historical data is by no means as varied or underrepresented as the archaeological data specific regional deficiencies exist in Carbon, Columbia, Fulton, and Perry counties.

Thus the general recommendations made for the prehistoric cultural resources should also be followed for the conservation of historic sites. Counties with low site totals should receive primary attention, especially Fulton County, due to the accelerated development of this area. Activities in this county as well as Blair, Columbia, and Lackawanna counties should focus on the identification of significant historic locations and their nomination to the National Register of Historic Places. In counties with a high frequency of recorded sites and few of these sites on the National Register, efforts should be made to promote their nomination. Counties in this category are all those with less than 30% of known sites on the National Register.

In summary, historical archaeological research will be best served with historic site survey in Fulton, Blair, Columbia, and Lackawanna counties, and by the nomination of sites to the National Register of Historic Places in Blair, Clinton, Cumberland, Dauphin, Huntingdon, Lebanon, Luzerne, Lycoming, Mifflin, Monroe, Montour, Schuylkill, Snyder, and Union counties.

TABLE 4.7

HISTORIC SITES: RECOMMENDATIONS FOR SURVEY AND NOMINATION OPERATIONS

IMPACTS

SURVEY

HIGH URGENCY LOW URGENCY

High	Medium	Low
Fulton	Blair Columbia Lackawanna	Bedford Carbon Columbia Juniata Mifflin Montour Perry Snyder
Huntington Lehigh Luzerne Monroe	Berks Cumberland Lycoming Schuylkill	Clinton Northumberland Union
Centre	Dauphin Northampton	Franklin Lebanon

NOMINATION

HIGH URGENCY LOW URGENCY

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4.12 Research Resources

4.12.1 Important Historical References for the Ridge and Valley Province

Regional

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Bedford County

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Berks County

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Blair County

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Columbia County

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Dauphin County

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Juniata County

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Montour County

SEE Columbia County.

Northampton County

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Northumberland County

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Perry County

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Schuylkill County

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Snyder County

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Union County

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4.12.2 Historical and Archaeological Assoications and Museums

The following names and addresses of historical and archaeological assoications and museums located in the counties which are wholly or are partly in the Ridge and Valley Province of the Appalachian Mountains were derived from three sources:

Brow, Victoria D. and D. M. Miller
1976 *Pennsylvania Directory of Historical Organizations 1976.* Pennsylvania Historical and Museum Commission, Harrisburg.

American Assoication of Museums
1982 *The Official Museum Directory: United States and Canada.* National Register Publishing Company, Inc., New York.

Hatch, James W.
1982 List of Society for Pennsylvania Archaeology Chapters, Letter.

1. *Bedford County*

Bedford County Heritage
Commission, Inc.
Post Office Box 1771
Bedford 15522
814-623-1771

Ford Bedford Park and Museum
Fort Drive Bedford 15522
814-623-8891

2. *Berks County*

Daniel Boone Homestead
Daniel Boone Road
#2 Box 162
Birdsboro 19508
215-582-4900

Exeter Township Historical
Commission
Exeter Township Municipal Bldg.
Fairlane and DeMauss Road
R.R.3
Reading 19606
215-779-1490, Ext. 25

Pennsylvania Dutch Folk
Culture Society, Inc.
Lenhartsville 19534
215-562-4803

Historic Preservation Trust
of Berks County
Post Office Box 1681
Reading 19603
215-385-3378

Historical Society of Berks
County and Museum
940 Centre Avenue
Reading 19601
215-375-4375

Reading Pulbic Museum and
Art Gallery
500 Museum Road
Reading 19601
215-371-5850

Society for Pennsylvania
Archaeology
Chapter #21, Schuylkill Valley
Robert J. Miller, President
24 Park Avenue, Hyde Park
Reading 19605
215-921-0148

Theordore Burr Covered Bridge
Society
117 Pennsylvania Avenue
Shillington 19607
717-777-3453

Tulphehocken Settlement Historical
Society
539 Franklin Street
Womelsdorf 19567
215-589-2044

3. *Blair County*

Blair County Historical Society
and Museum
3500 Baker Blvd.
Altoona 16602
814-943-9327

4. *Carbon County*

Eckley Miners Village Pennsylvania
Anthracite Museum Complex
R.D.2, Box 236
Weatherly 18255
717-636-2070

5. Centre County

Aaronsburg Historical Museum
Association
Aaronsburg 16820
814-349-5328

Centre County Library and
Historical Museum
203 North Allegheny Street
Bellefonte 16823
814-355-1516

Boalsburg Mansion and Museum
Boalsburg 16827
814-466-6210

Pennsylvania Military Museum
28th Division Shrine
Box 148
Boalsburg 16827
814-466-6263

Museum of Anthropology
Sub-Basement, Sparks Building
Pennsylvania State Universtiy
University Park 16802
814-865-3853

Pennsylvania Historical
Association
Department of History
806 New Liberal Arts Bldg.
Pennsylvania State University
University Park 16802
814-863-0162

Society for Pennsylvania
Archaeology
Chapter #24, Bald Eagle
Mary Alice Graetzer, President
464 Westgate Drive
State College 16801
814-238-5239

6. Clinton County

Clinton County Historical
Society, Inc. and Museum
Post Office Box 255
Lock Haven 17745
717-748-7254

7. Columbia County

Columbia County Museum
353 East Main Street
Post Office Box 197
Orangeville 17859
717-683-6011

Columbia County Historical
Society
105 Blakesless Center for the
Humanities
Bloomsburg State College
Bloomsburg 17815
717-784-5177

Berick Historical Society
1019 East Front Street
Berwick 18603

8. Cumberland County

Cumberland County Historical
Society and the Hamilton
Library
21 North Pitt Street
Post Office Box 626
Carlisle 17013
717-249-7610

United States Army Military
History Institute
Carlisle Barracks 17013
717-245-4114

Newville Historical Society
R.D. 3, Box 50A
Newville 17241

9. Dauphin County

Historical Society of Dauphin
County and Museum
219 South Front Street
Harrisburg 17104
717-233-3462

The State Museum of Pennsylvania
Third and North Street
Box 1026
Harrisburg 17120
717-787-4980

Hummelstown Area Historical Society
The Parish House
Rosanna Street and North Alley
Hummelstown 17036
717-533-0121

Middletown Area Historical Society
47 Brown Street
Middletown 17057
717-944-4159

Society for Pennsylvania
Archaeology
Chapter #10, Susquehannock
George Helper, President
R.D.2
Dauphin 17018
717-921-2162

10. Franklin County

Franklin County Heritage, Inc.
Post Office Box 78
Chambersburg 17201
717-264-6364

Historical Commmenoration Society
of Waynesboro
323 East Main Street
Waynesboro 17268

Kittochtinny Historical Society
158 Lincoln Way East
Chambersburg 17201
717-597-7339

Martins Mill Covered Bridge
Association
13 South Washington Street
Greencastle 17225
717-597-7339

Fort Loudon Historical Society
U.S. 30
Fort Loudon 17724
717-783-5406
Mailing Address:
Box 1026
Harrisburg 17120

Shippensburg Historical Society
and Museum
West King Street
Library Building
Shippensburg 17257
717-532-4508

Renfrew Museum and Park
1010 East Main Street
Waynesboro 17268
717-762-4723

11. Fulton County

Fulton County Historical
Society and Museum
Fulton House
112 Lincoln Way East
McConnellsburg 17233

12. Huntingdon County

Huntingdon County Historical
Society and Museums
106 Fourth Street
Post Office Box 305
Huntingdon 16652
814-643-5449

13. Juniata County

Juniata County Historical
Society and Museum
Mifflintown 17059
717-436-6039

Tuscarora Academy
Post Office Box 263
Mifflin 17058
717-527-4010

14. Lackawanna County

Everhart Museum of Natural
History, Science, and Art
Nay Aug Park
Scranton 18510
717-346-7186

Lackawanna County Historical
Society
232 Monroe Avenue
Scranton 18510
717-344-3841

Scranton Anthracite Museum
R.D.#1
Bald Mountain Road
West Scranton 18504
717-964-4804

15. Lebanon County

Cornwall Iron Furnace
Post Office Box V
Cornwall 17016
717-964-4804

Historic Preservation Trust of
Lebanon County
11 East Berman Avenue
Lebanon 17042
717-273-5671

Lebanon County Historical Society
and Museum
924 Cumberland Street
Lebanon 17042
717-272-1473

Historic Schaefferstown, Inc.
and Museum
North Market Street
Schaefferstown 17088

16. Lehigh County

Lehigh County Historical Society
Trout Hall, 414 Walnut Street
Allentown 18102
215-434-9471

Lock Ridge Furnace Museum
Franklin Street
Alburtis
Mailing Address:
Lehigh County Courthouse
5th and Hamilton Streets
Allentown 18101
215-820-3282

The Haines Mill Museum
3600 Dorney Park Road
Allentown
Mailing Address:
(as above)

Lehigh County Museum
Lehigh County Courthouse
5th and Hamilton Streets
Allentown 18101
215-820-3282

Annie S. Kemerer Museum
427 North New Street
Bethlehem 18018
215-868-6868

Historic Bethlehem, Inc.
510 Main Street
Bethlehem 18018
215-691-5300

Shelter House Society
South Fourth Street Extension
Box 254
Emmaus 18049
215-965-6751

Lehigh University Art Galleries
Bethlehem 18015
215-861-3615

Moravian Museum of Bethlehem
66 West Church Street
Bethlehem 18018
215-867-0173

17. Luzerne County

Eckley Miners Village
R.D.2, Box 236
Weatherly 18255

Society of Pennsylvania
Archaeology
Chapter #1, Frances Dorrance
Paul Shiptoski, President
R. 161 West Union Street
Nanticoke 18634
717-735-8033

Wapwallopen Historical Society
201 Jackson Street
Berwick 18605
717-752-7412

18. Lycoming County

Jersey Shore Historical Society
200 South Main Street
Jersey Shore 17740

Lycoming County Historical
Society and Museum
858 West Fourth Street
Williamsport 17701
717-326-3326

Montgomery Area Historical
Society
24 Montgomery Street
Montgomery 17752
717-546-1274

Muncy Historical Society and
Museum of History
Muncy 17756
717-546-3433

Society for Pennsylvania Archaeology
Chapter #8, North Central
Joe Zebrowski, President
R.D.2, Box 685B
Montoursville 17754
717-433-4484

19. Mifflin County

Mifflin County Historical Society,
Inc. and Museum
McCoy House
17 North Main Street
Lewistown 17044
717-242-1022

20. Monroe County

Monroe County Historical Society
Stroud Community House
1900 Main Street
Stroudsburg 18360

Quiet Valley Living Historical
Farm
Box 696
Stroudsburg 18360
717-992-6161

21. Montour County

Montour County Historical
Society and Museum
One Bloom Street
Danville 17821

22. Northampton County

Pennsylvania Canal Society and
Canal Museum
Hugh Moore Park
200 South Delaware
Post Office Box 877
Easton 18042
215-258-7155

Northampton County Historical
Society and Museum
101 South Fourth Street
Easton 18042
215-253-1222

Gilman Museum at the Cave
Post Office Box 103
Hellertown 18055
215-838-8767

Historic Bethlehem, Inc.
Main and Church Streets
Bethlehem 18018
215-868-6311

Jacobsburg Historical Society
Box 345
Nazareth 18064
215-253-4547

Moravian Historical Society
and Museum
214 East Center Street
Nazareth 18064
215-759-0291

Pennsylvania Labor History Society
1720 Eleventh Street
Bethlehem 18017

Sun Inn Preservation Association
Post Office Box 18001
Bethlehem 18001
215-867-8470

Society for Pennsylvania
Archaeology
Chapter #14, Forks of the Delaware
Wesley James, President
205 North Main Street
Nazareth 18064
215-759-2342

23. Northumberland County

Northumberland County Historical Society and Museum
Sunbury 17801
717-286-0858

Fort Augusta
1150 North Front Street
Sunbury 17801
717-286-4871

24. Perry County

Historical Society of Perry County
129 North Second Street
Newport 17074
717-582-2646

25. Schuylkill County

Ashland Anthracite Museum
Pennsylvania Anthracite Museum Complex
Pine and Seventeenth Street
Ashland 17921
717-875-4708

Historical Society of Schuylkill County
14 North Street
Pottsville 17901
717-622-7540

26. Snyder County

Snyder County Historical Society
Dunkelberger Library
Seibert Hall
Susquehanna University
Box 114
Selinsgrove 17870

Snyder County Historical Society, Inc. Museum
30 E. Market Street
Post Office Box 276
Middleburg 17842
717-837-6191

27. Union County

New Berlin Heritage Assoication
Vine Street
New Berlin 17855
717-966-0065

Union County Historical Society
Box 154
Laurelton 17835
717-922-1832

Union County Historical Society Museum
Union County Courthouse
2nd and Lewis Street
Lewisburg 17837
717-524-4461, Ext. 56

Packwood House Museum
10 Market Street
Lewisburg 17837
717-524-0323

4.12.3 Contractors

Louis Berger & Assoicates, Inc.
100 Halsted Street
East Orange, NJ 07019

Cultural Heritage Research Services
P.O. Box 67
New Castle, DE 19720
302-429-0744

Dr. Jay Custer
Department of Anthropology
University of Delaware
Newark, DE 19711
302-738-2821

GAI Consultants, Inc.
570 Beatty Road
Pittsburgh
Monroeville, PA 15146
412-856-6400

Gilbert/Commonwealth
Commonwealth Associates, Inc.
209 East Washington Avenue
Jackson, MI 49201

Gove Associates
1601 Portage Street
Kalamazoo, MI 48001
616-385-0011

Dr. Conran Hay
Department of Anthropolgy
The Pennsylvania State University
University Park, PA 16802
Home: 814-466-7404
Office: 814-863-2301

Mr. Richard W. Hunter
Archaeologist, MA, SOPA, AFFA
113 Rileyville Road
Hopewell, NJ 08525
609-466-0025

Dr. Richard Jordan
Department of Anthropology
Bryn Mawr College
Bryn Mawr, PA 19010
215-LA5-1000, Ext. 359

Dr. Susan Kardas
Dr. Edward Larrabee
Historic Sites Research
86 Snowden Lane
Princeton, NJ 08540
609-921-8109

Dr. W. Fred Kinsey
North Museum
Franklin & Marshall College
Lancaster, PA 17604
717-291-3943

Dr. Barbara Ligget
116 West Gravers Lane
Philadelphia, PA 19118
215-242-3599

Paul D. Marshall & Associates, Inc.
Suite 406
1033 Quarrier Street
Charleston, WV 25301

Dr. Ronald Michael
Department of Anthropology
California State College
California, PA 15419
Home: 412-438-0686
Office: 412-938-4042

Mid-Atlantic Archaeological Resources, Inc.
Mr. Ronald Thomas
P. O. Box 676
Newark, DE 19711
302-368-5777

John Milner Associates
309 North Matlack Street
West Chester, PA 19380
(Alex Townsend, Daniel Roberts)
215-436-9000

Michaeol Parrington
4625 Spruce Street
Philadelphia, PA 19104
215-747-8438

Public Archaeology Facility
State University of New York
Binghamton, NY 13901
607-798-4788

Dr. James Richardson
Carnegie Museum
University of Pittsburgh
Pittsburgh, PA 15211
412-624-4096

Dr. Robert Schuyler, Managing Director
Museum Institute for Conservation Archaeology
University Museum
University of Pennsylvania
Philadelphia, PA 19104
215-243-6981

Soil Systems, Inc.
5201 Governor Printz Boulevard
Wilmington, DE 19809
302-762-2965

Mr. Michael Stewart
Route 1, Box 2
Waynesboro, PA 17268
717-762-9715

Clark Sykes, Director
Office of Public Archaeology
Boston University
Archaeological Studies Program
525E-232 Bay State Road
Boston, MA 02215
617-353-3415

WAPORA
5700 Hillside Avenue
Cincinnati, OH 45233

Dr. Renata Wolynec
Department of Anthropology
Edinboro State College
Edinboro, PA 16412

Woodward Group
Cultural Resources Consultants
Milton, PA 17847

4.12.4 Archaeological References for the Ridge and Valley Province by County

1. Bedford County

Beckerman, Ira C.
(1981)

Boyd, G.
(1979)

Hatch, J. W.
(1977)

Kent, B. C., J. Rice, and K. Ota
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(1981) Artifact. Pennsylvania Archaeologist 51(4):44.

Smith, I. F., III
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(1978) Sutter Cache. Pennsylvania Archaeologist 48(1-2)72.

2. Berks County

Anonymous
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(1981) (see Bedford County)

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(1979)

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Gruber, J.
(N.D.) An Archaeological Survey of Some Dam Areas in Berks, Carbon, Tioga, and Centre Counties, Pennsylvania. Report submitted to the U.S. Army Corps of Engineers.

Hill, R. B.
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Kent, B. C., et al.
(1981) (see Bedford County)

Mercer, H. C.
(1894)

Witthoft, J.
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Wren, C.
(1914) A Study of North Appalachian Indian Pottery. *Wyoming Historical and Geological Proceedings and Collection* 13:131-222, Wilkes Barre.

3. Blair County

Guilday, J.
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Harshberger, A. P.
(1965) Drawings for Edgar J. Stackhouse, Gromiller Cave. *Pennsylvania Archaeologist* 35(3-4):105-117.

Smith, I. F., III
(1970) (see Bedford County)

Stackhouse, E. J.
(1965) Gromiller Cave. *Pennsylvania Archaeologist* 35(3-4): 105-117.

4. Carbon County

Gruber, J.
(N.D.) (see Berks County)

Kent, B. C., *et al*.
(1981) (see Bedford County)

Wren, C.
(1914) (see Berks County)

5. Centre County

Anonymous
1972) Shenks Ferry Vessel. *Pennsylvania Archaeologist* 42(1-2):76-77.

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(1978) Genrative Settlement Pattern Models: A Critical Review. Master's Thesis. The Pennsylvania State University, Universtiy Park, PA.

Gruber, J.
(N.D.) (see Berks County)

Hamilton, C. E.
(1981) Preliminary Report: Archaeological Testing of Centre Furnace. Report submitted to the Centre County Historical Society, Bellefonte, Pa.

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(1977) A Preliminary Archaeological Survey in Conjunction with Power line Construction in the Nittany Valley, Centre County, Pa. Final Report to BHI, Purdys, NY.

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Kent, B. C. _et al_.
(1981) (see Bedford County)

Michael, R. L.
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(1972) (see above)

Randolph, J.
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Webster, D., M. Alderderfer, J. W. Hatch, C. A. Hay
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6. _Clinton County_

Anonymous
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Hay, C. A., J. W. Hatch, and C. M. Stevenson
(1978) Lock Haven Flood Protection Project Archaeological Reconnaissance, Clinton County, PA. Report submitted to the Woodward Group, Cultural Resource Consultants, Milton, PA.

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(1981) (see Bedford County)

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Ritchie, W. A.
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Smith, I. F., III
(1970) (see Bedford County)

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8. Cumberland County

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Kent, B. C., et al.
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Smith, I. F., III
(1970) (see Bedford County)

9. Dauphin County

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21. Montour County

Kent, B. C., *et al.*
(1981) (see Bedford County)

Wren, C.
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22. Northampton County

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CHAPTER 5

WESTERN PENNSYLVANIA:
APPALACHIAN PLATEAU AND LAKE ERIE SHORE

5.1 General Introduction

5.1.1 Physiography, Relief and Drainage

Most of western Pennsylvania lies within the Appalachian Plateau Province which is divided into four sections: the Glaciated Section, the Allegheny High Plateau, the Allegheny Mountain Section and the Pittsburgh Section. The Allegheny Mountain Section bounds the area on the east as the mountains rise in Fayette, Somerset, Westmoreland, Cambria, and Clearfield counties and in parts of Cameron and Indiana Counties.

The small portion of northwestern Pennsylvania bordering Lake Erie lies in the Eastern Lake Section of the Central Lowland Province (Fenneman 1938).

The Allegheny Plateau is characterized by relatively flat-lying strata which are broken only by small faults and low, broad folds. The topography ranges from deep-sided, narrow stream valleys to uniform, low, rolling hills.

The major drainage, the Allegheny River, drains approximately 29,800 square kilometers (11,500 square miles) in New York and western Pennsylvania. A small portion of the study area encompasses the West Branch of the Susquehanna River.

Soils on floodplains are generally an unconsolidated, heterogeneous mixture of recently deposited clay, silt, sand and boulders in unglaciated areas. Reworked Pleistocene gravels from outwash are well represented. Detailed reports on geology, climatic history, flora and fauna, and soils are available in the Regional Survey Reports from three diverse areas of Western Pennsylvania.

5.1.2 Study Unit Organization

For the purposes of summarizing the archaeological resources of Western Pennsylvania both chronological and thematic units will be used. The Standard culture historical divisions will be used to define chronological units: Paleo-Indian, Archaic, Woodland, and Historic. Within the Historic Period unit, thematic units (e.g. Transportation, Architecture, etc.) will also be defined.

5.2 Paleo-Indian Period by S. W. Lantz

5.2.1 Introduction: Previous Research

The Paleo-Indian is the earliest artifactually well documented culture found reginally in western Pennsylvania. For the Purpose of this overview, Paleo-Indian sites were determined by the presence of one or more artifacts identified as belonging to the distinctive Paleo-Indian tool kit. This included various forms of fluted points: Clovis, Folsom, or late Paleo-Indian types. Also considered were unifacially flaked tools such as side and end scrapers, often with spurs, knives, gravers and utilized flakes. These were generally only considered when found in close proximity to known Paleo-Indian point locations; or, in most cases, when classified by more than one researcher. Unfluted lanceolate or Plano Complex types are included in the study.

All of the Paleo-Indian sites recorded in western Pennsylvania have been surface finds with the exceptions of a fluted point found in a rockshelter in Armstrong county, a complete fluted point excavated from a spring site in Westmoreland county, and the material excavated at Meadowcroft Rockshelter in Washington county.

The radiocarbon chronology of the Paleo-Indian occupation of Meadowcroft Rockshelter from the lower level IIA is given as ranging from 10,850 B.C. ±870 to 14,225 B.C. ±975. Recovered from this level were tools and a lanceolate point with basal grinding (Adovasio, et al. 1977:23).

Research for this report was first initiated with a search of the Carnegie Museum of Natural History files for information on Paleo-Indian finds. Until recently, it has not been the policy to record the locations of single Paleo-Indian point finds as "a site;" therefore, most of the data was not easily available. Letters of inquiry and searches through new and existing collections have added significantly to the data base of this paper.

A fluted point was accessioned by Carnegie Museum in 1902 but not recognized for its antiquity until 1950 when John Rush Simpson of the Museum staff documented the Paleo-Indian point from the McKees Bottoms site in Allegheny county (Swauger 1982: personal communication). This point is illustrated in the Prehistory of the Upper Ohio Valley (Mayer-Oakes 1955). Fluted points have long been recognized in private collections in the area. In 1942, Edmund Carpenter reported the results of his survey work in the upper Allegheny and mentions fluted point finds in the Conewango and Allegheny valleys. By 1955, John Witthoft had acquired information on a number of fluted points in Pennsylvania, including nine from the western section and the Allegheny valley. Six of the specimens were manufactured of Onondaga chert, while others were from jasper and one unidentified black flint (Witthoft 1950). Witthoft describes an Onondaga chert fluted point and side scraper manufactured by the Enterline method as coming from the Big Bend Site (36 ME 24) situated on the Shenanago River (Witthoft 1952, 1971). Also from this same site, Mayer-Oakes reported a crude fluted lanceolate point of mottled gray and black chert, possibly from the Plum Run quarry in Ohio, in the Raymond H. Cox collection (Mayer-Oakes, 1955:72). Dragoo Later recorded five fluted points from the Big Bend Site and indications are that this was a major Paleo-Indian station since no other site in western Pennsylvania has produced eight fluted points.

Included in Mayer-Oakes survey of the Upper Ohio Valley were 44 Paleo-Indian artifacts catalogued by drainage:

Allegheny Drainage - 25 artifacts
Beaver Drainage - 9 artifacts
Monongahela Drainage - 8 artifacts
Ohio Drainage - 3 artifacts

Since 1955, other than the recording of an occasional artifact, little research was done on western Pennsylvania Paleo-Indians. In 1973, J. M. Adovasio of the Department of Anthropology, University of Pittsburgh, initiated the extensive Meadowcroft/Cross Creek project. This project was centered on archaeological field surveys and excavations within the Cross Creek drainage, located east of the Ohio River in Washington county (Carlisle and Adovasio 1982).

The extensive ground survey of the Cross Creek drainage continued through 1977. During that interval, 236 archaeological sites were recorded, with eight components reported as being early to late Paleo-Indian. A total of 26 Paleo-Indian artifacts were identified during the survey (Fryman 1982:55-58).

At the Meadowcroft Rockshelter (36 WH 297), a Clovis point fragment was recovered from upper middle Stratum IIA. Lower levels in this stratum contained a Miller Lanceolate point and a Mungai knife. The lanceolate blade and rhomboidal shaped flake knife were first found and typed at Meadowcroft (Adovasio et al. 1975:18, Carlisle and Adovasio 1982). Stratum IIA was sealed under a rockfall episode at 10,000 B.C. (Adovasio et al. 1977:38). Miller Lanceolate points and Mungai knives were also found at Cross Creek Village (36 WH 293).

At the eastern edge of Cross Creek drainage, an extensive collection acquired by Nello Mungai on his farm, contained a wide range of cultural material including a Miller Lanceolate. Included in the Plano material recorded from the Cross Creek drainage north of Avella, Pennsylvania, at 35 WH 361 and 36 WH 520, were McConnell Lanceolate, Stringtown Stemmed, Sawmill Stemmed, and Miller Lanceolate points (Adovasio, et al. 1982:259). Plano material was also present at 36 WH 351, a possible base camp and flint reduction station (Fryman 1952:63), (Herbstritt 1983, personal communication).

Other Paleo-Indian artifacts recorded by the University of Pittsburgh survey crews include a Clovis point of Flint Ridge chalcedony from the Marosi Farm site (36 WH 407) and Plano material from 36 WH 72. Site 36 WH 514 was also recorded as Paleo-Indian.

In 1978, Carnegie Museum of Natural History was contracted by the Pennsylvania Historical and Museum Commission to conduct an archaeological survey of Region IV, Northwestern Pennsylvania. The result of this survey was a report covering a reconstruction of the post-Pleistocene environment through time. Recorded were 193 archaeological sites, including nine late Paleo-Indian Plano points from Crawford county: 36 CW 145, 36 CW 152, 36 CW 165, 36 CW 174, 36 CW 227 and 36 CW 229. Also in Crawford county, one Paleo-Indian knife was noted. All of the recorded sites are located on glacial kames and outwash terraces. Only two Paleo-Indian artifacts were recorded in Erie county: a Plano point and a possible fluted point basal fragment were identified in a collection accumulated near the mouth of Elk Creek on the Lake Plain (36 ER 120).

In 1979, the Pennsylvania Historical and Museum Commission instituted the Regional Archaeological Program in Pennsylvania. This program was partly supported by the Federal Department of Interior through a Survey and Planning Grant to the state. The Commission divided Pennsylvania into regions, selecting institutions who were required to match the grant funds from the state, to do archaeological survey in their respective regions. The institutions in turn, appointed archaeologists to conduct the work. Western Pennsylvania was sub-divided into three regions with Carnegie Museum working in Region VII, California State College in Region II and the University of Pittsburgh in Region IV.

The Region VII survey produced a total of 563 archaeological sites with 15 identified as containing Paleo Indian materials. Seven of these were located in Armstrong County, six in Indiana and two in Cambria (Cowin, 1980, 1981, 1982).

The survey in Region IV, out of the University of Pittsburgh, recorded 161 sites during the years from 1979 to 1982 with 16 Paleo Indian sites noted, 13 of which were in Crawford County. Fluted points, not described as to material of manufacture were reported from 36 CW 244, 36 CW 245, 36 CW 283, 36 CW 290 and 36 CW294. Plano points were found at 36 CW 248, 280 and 322 and six Plano points were recovered at 36 CW 246. A Plano point from 36 CW 318 was manufactured from a dark gray chert with white inclusions, source unknown. A dark gray to black streaked chert Paleo-Indian knife was reported from 36 CW 117.

Two late Paleo-Indian sites were recorded in Mercer county; one an Angustora-like point from 36 ME 126 and an undescribed Plano point in a collection from 36 ME 135.

In Butler county, a thin fluted point of an unknown grayish-tan chert with gray and reddish-gray blotches, was found years ago on a low bench near a spring run. The author believes this unusually thin point is similar to several of the Lindenmeier specimens.

The Region II survey out of California State College reported 319 sites; two of which were Paleo-Indian. In Fayette county, a Clovis point was recorded from the hilltop Malenock # 1 site (36 FA 300). In Washington county, a complete Clovis point of Upper Mercer banded Coshocton, Ohio flint, was recovered from a peninsula-like bench site, the Richard's Farm (36 WHL 919).

The most recent and comprehensive research on Paleo-Indians in western Pennsylvania is the unpublished manuscript by Carl Burkett, Jr.,: The Analysis and Distribution of Paleo Indian Artifacts in Western Crawford County, Pennsylvania. In this report, Burkett describes six fluted, eight unfluted Plano type points, and one Paleo Indian tool.

The author's work with Paleo-Indians was initiated by the discovery of Paleo-Indian artifacts during the Clark and Lantz (1952 to 1959) survey of the French Creek drainage in Erie county. Forty-six sites were recorded during that survey, including seven Paleo-Indian locations (see map, Figure 5.1).

5.2.2 Site Location and Distribution in Western Pennsylvania

In the 23 counties within the drainage of the Upper Ohio Valley in western Pennsylvania, Paleo-Indian artifacts have been recovered from 216 sites (Table 5.1). From these sites, 358 Paleo-Indian artifacts have been identified (Table 5.2). Not included in this summary are a number of other Paleo-Indian artifacts housed at Carnegie Museum of Natural History, but lacking provenience. The sites are plotted on Figure 5.1.

With the exception of Potter county, it is obvious that the highest percentage of Paleo-Indian sites lie within Warren, Lawrence, Crawford, Mercer, Somerset, Indiana, Butler, Allegheny, Armstrong, and Erie counties where regional survey work or other contracted survey activity has taken place.

Little archaeological field work has been done in McKean, Elk, Potter and Forest counties which are heavily forested. The other obvious gaps in information occur in Venango and Potter counties where no new sites have been added to the Upper Ohio Valley files since 1974.

5.2.3 Types of Paleo-Indian Sites

5.2.3.1 Kill Sites

Of the 358 Paleo-indian artifacts presently known for western Pennsylvania, 154 were isolated or stray finds not found in association with other Paleo-Indian material. Of the 133 projectile points in this group, 77 were determined to be complete points most likely lost during hunting activities rather than being discarded. Seventeen other specimens consisting of tip fractured points, tip sections, split halves, or points having broken barbs are also indicative of the pursuit of game. Furthermore, of the above projectiles, thirty complete points, four tip fractured, and one point tip section were found on the glaciated plateau in close proximity to post glacial lakes, marshed, and abandoned river channels. These loci were ideal for hunting large herbivores. Saunders has listed eleven occurrences in North America where Paleo-Indian artifacts are associated with mammoth remains. All occur at locations where geological conditions indicated the presence of water. (Saunders 1980:87,88). In Crawford County, Carl Burkett has documented three mammoths, a mastodon, and other extinct fauna in close proximity to Paleo-Indian artifacts (Burkett 1981: 40,41). South of the glaciated area 13 complete points, four fluted point tips, and two with fractured ears, were found in similar geographic locations being located at low elevations near water. At several other lowland locations in western Pennsylvania, two Paleo-Indian points, not known to be associated with tools, have been reported.

Figure 5.1

Paleo-Indian Site Distribution

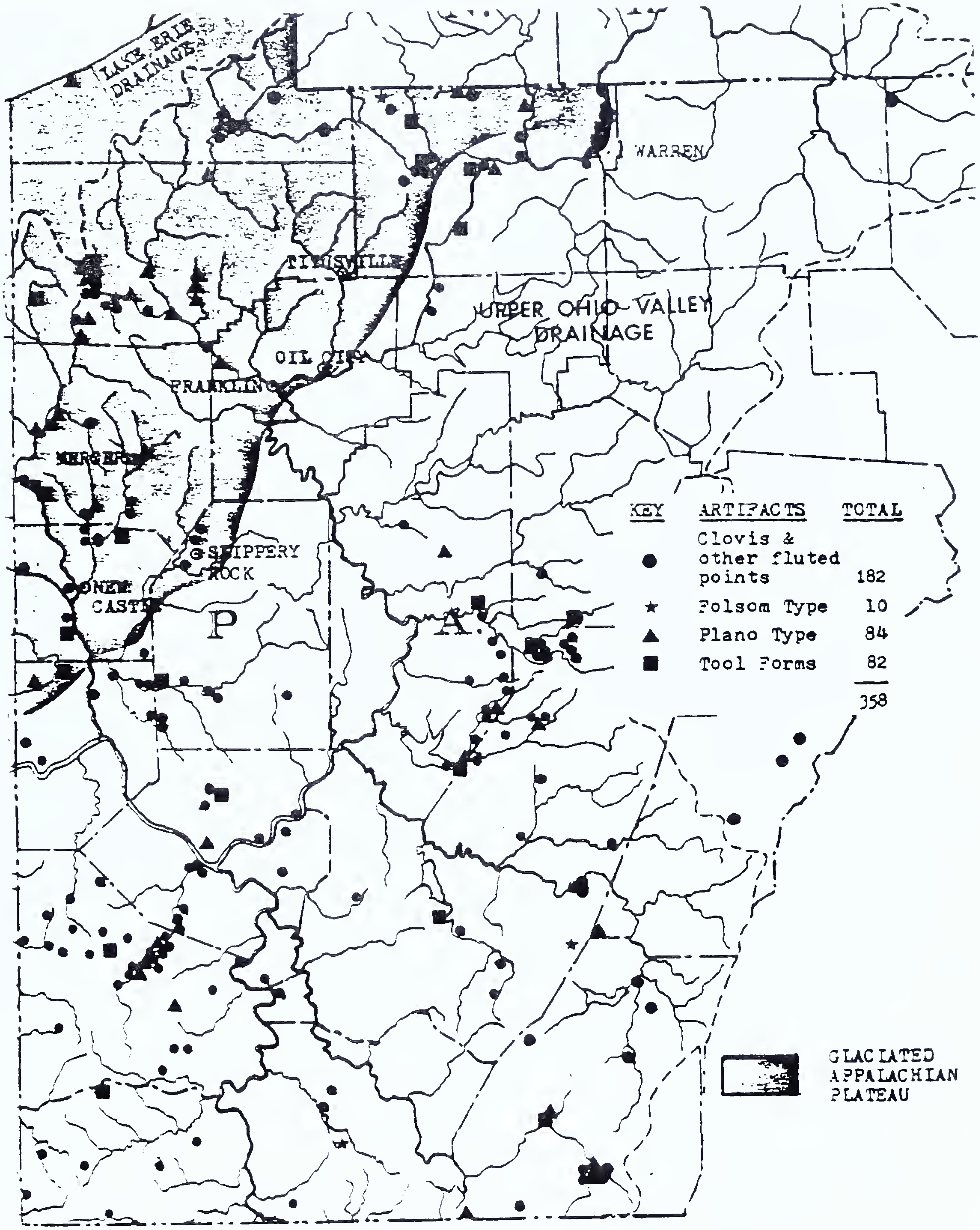


TABLE 5.1

COUNTY	NUMBER OF RECORDED SITES	RECORDED PALEO SITES	RECOVERED ARTIFACTS
Allegheny	251	16	25
Armstrong	244	13	18
Beaver	217	9	13
Butler	161	9	16
Cambria	139	5	6
Clarion	129	1	1
Crawford	339	24	32
Elk	51	1	1
Erie	178	9	16
Fayette	325	3	3
Forest	18	2	4
Greene	173	3	4
Indiana	306	19	26
Jefferson	85	2	4
Lawrence	93	8	14
McKean	12	0	0
Mercer	159	13	37
Potter	3	1	4
Somerset	185	12	13
Vanango	213	1	3
Warren	218	24	52
Washington	897	30	53
Westmoreland	553	11	13
TOTALS	4,949	216	358

TABLE 5.2

SUMMARY: Paleo-Indian Artifact Types in Western Pennsylvania

Type	
Fluted Points	136
Clovis	42
Folsom	10
Cumberland	2
Plano	82
Other Points (may include misidentified tools)	145
Tools	77
scrapers	62
knives	14
piece escailles	1
Total	358

At intermediate and upland locations only two stray finds are known for the glaciated plateau, whereas 28 complete points are recorded in unglaciated areas. This suggests a more diversified set of fauna being pursued in unglaciated areas. Of the 154 isolated artifact finds, only eleven lithic items were in the tool category.

It is possible that some of the above projectile point finds were from temporary habitation sites near prime hunting areas. A suggestion of this is the 18 isolated point bases recorded from all locations. It seems most logical that these items were being discarded at temporary camp sites.

5.2.3.2 Lowland Waterside Camps

Thirty seven sites having assemblages of Paleo-Indian points, point bases, performs, and various tools were recorded within the study region. Twenty five of these were lowland sites near post-glacial lakes, marshes, river and large streams: locations identical to lowland kill sites. Of these, six are considered major sites, including Cornplanter (36WA70) located on the Allegheny River in Warren County and Big Bend site (36ME24) on the Shenango River. Of the 25 lowland camp sites, 17 (six major sites) were on the glaciated section of the Appalachian Plateau.

5.2.3.3 Upland Camp Sites

Only 12 upland sites contained combinations of artifacts and diagnostic artifact fragments, such as point bases, that indicate bivouac or habitation site locations. Four of these locations are at intermediate locations, central to high and low relief. Only one of these locations at an intermediate elevation would be considered a major site: the Meadowcroft Rockshelter, (36WH297), located on Cross Creek in Washington county.

5.2.3.4 Trail Camps

The upper Allegheny River valley from Warren County, upriver to Olean, New York is probably the most culturally prolific region in western New York and northwestern Pennsylvania. This can be demonstrated by the number of sites recorded, the abundance of diversified lithic and ceramic materials, and range of represented cultures. (Lantz 1982:27). The broken mountain country was not easily traversed by man, whereas, the river valley with its glacial outwash terraces, although not necessarily direct, was level and afforded a fairly dry passage. Geographically, the, "Allegheny Corridor", is connected to far reaching stream valley systems. The Allegheny River valley and connecting valley systems provided favorable geological features for trail camps as well as hunting and fishing stations.

Eighteen Paleo-Indian sites have been recorded along the Brokenstraw and Allegheny valley in Warren County and of these, three are considered major camp sites, the others being small camps or possible kill sites. Historically, these valleys were linked by the Brokenstraw Path (Wallace 1965: 25-47) commencing at Waterford, Pennsylvania and extending east to near Irvine (15 Paleo-Indian sites). At this point it joins the Cornplanter-Venango Path (8 Paleo-Indian sites). At Cornplanter it is known as the Forbidden Path that extends up the Allegheny to Salamanca (20 Paleo-Indian sites). The author has designated this trail of Paleo-Indian finds as the Allegheny Paleo-Indian Corridor. (Lantz 1982:36).

There is also a series of over 20 Paleo-Indian sites along Chartiers Creek in Washington and Allegheny counties. Wallace lists the path as the Catfish Path extending from near Braddock in Washington County to Pittsburgh. (Wallace 1965:32).

The author is not implying that the known historic trails were recognized as such during Paleo-Indian times, rather, that the valleys provided the passage of least resistance, a feature which made them attractive routes for later (historical) paths.

It is also possible that Paleo-Indians were attracted to the valley system due to abundant animal resources. If caribou were migrating through the region, they most surely would have used the connecting valleys as would extinct fauna such as the mastodon and mammoth. The association of Paleo-Indian and caribou has been documented at Dutchess Quarry Cave in southeastern New York. (Funk 1972:15). According to Guilday, the mastodon, mammoth, caribou, and some 23 other large species existed in the mid-Appalachian area in late Pleistocene times. (Guilday 1982:23). However, even though the fauna may have been the attraction, a study of the lithic materials concentrated especially in the Allegheny valley suggests the funneling of people through the narrow valley from distant points or origin.

5.2.3.5 Quarry Sites and Tool Reduction Stations

Quarry sites and tool reduction stations are almost unknown in western Pennsylvania. Other than the reduction of transported blanks and tool repair on camp sites, there is little evidence of major quarrying and quarry block reduction. Only one site, 36WH351, in Washington County, has been reported as a workshop near a quarry source during Paleo-Indian times (Fryman 1982:63; Herbstritt 1983: personal communication). However, few Paleo-Indian items have been identified as being manufactured from locally known flint sources in western Pennsylvania. Present data indicate a preference for the high quality cryptocrystalline lithic materials from Coshocton County, Ohio and other Ohio sources to the north.

A few Paleo-Indian lithic specimens have been identified as being manufactured from Uniontown, Ten Mile, and Monongahela cherts with outcrops in Washington and Green Counties, Pennsylvania. No other quarry sources are known for western Pennsylvania. Another chert resource largely ignored by Paleo-indians was glacial and melt-water transported Onondaga chert nodules from western New York (Divers lake) and Canada. This material was available in glacial deposits throughout northwestern Pennsylvania and within the valleys of the Ohio River drainage.

5.2.4 Lithic Resources

Of the 358 recorded Paleo-Indian finds in western Pennsylvania, 131 are of unknown materials. Of this group (unknown material) 26 artifacts were described by color and other characteristics.

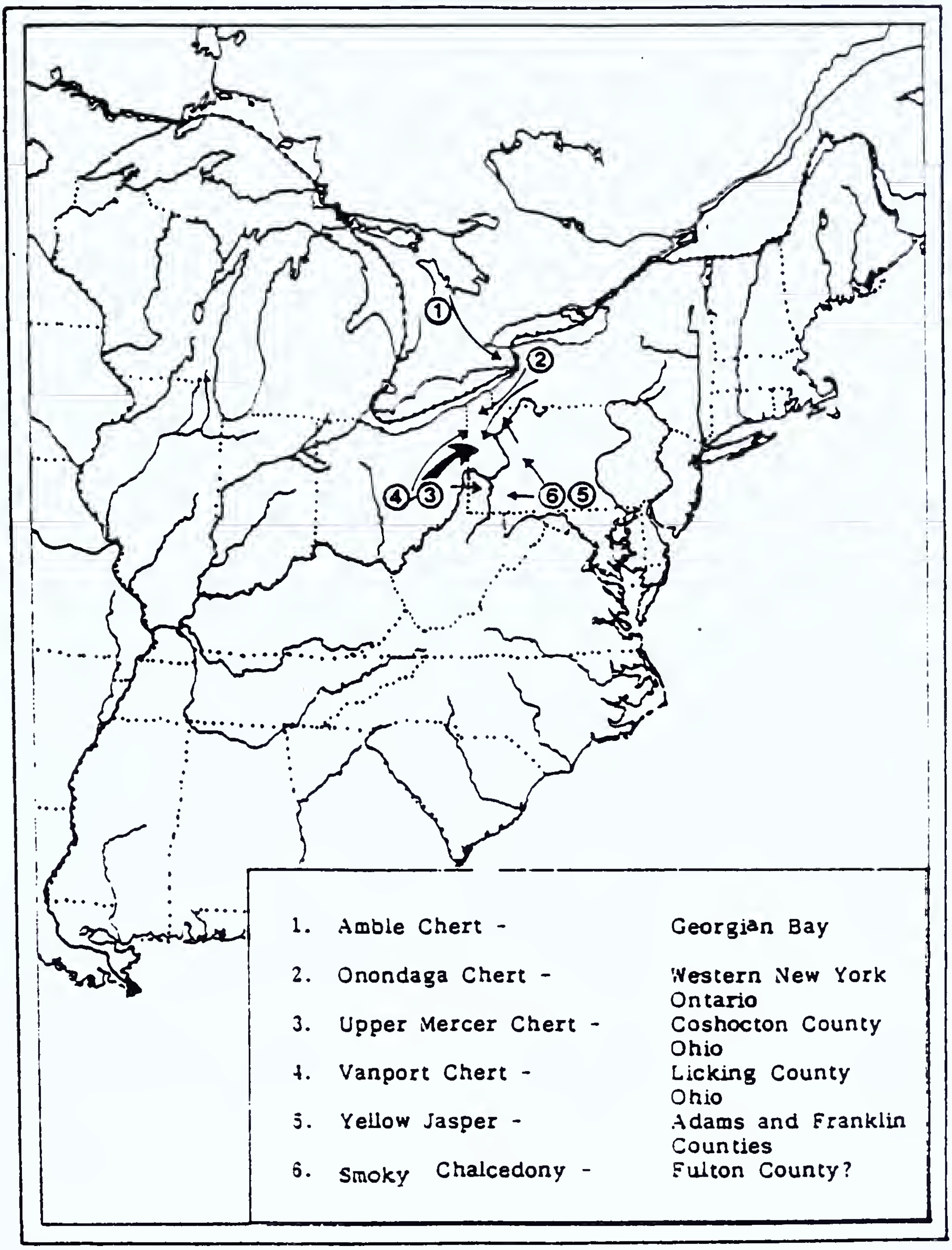
High quality cryptocrystalline lithic materials were obviously preferred by Paleo-Indians, who were willing to travel great distances to obtain desired materials. The most preferred lithic source was the Coshocton County Upper Mercer flints of Ohio. Eighty-eight Paleo-Indian artifacts were identified as being manufactured from this material. The second most utilized material was selected top-quality Onondaga chert. Thirty five of these specimens are most likely quarried from chert-bearing Onondaga Limestone of Middle Devonian age outcropping in western New York. Quantities of this material, as previously pointed out, are present in glacial deposits in western Pennsylvania, making this assumption open to debate. However, the small size of the glacial and water-tumbled Onondaga chert pebbles does not easily lend itself to large glade production, as demonstrated by Witthoft in the Enterline chert industry (Witthoft 1971:35). Furthermore, no artifacts have been found exhibiting a trace of a pebble surface. Eight Paleo-indian artifacts fashioned from Onondaga cherts consisted of small spurred scrapers and several minutes fluted points. Given the smallness of these artifacts (less than two centimeters square) they could have been manufactured from glacial pebble cherts.

Although Middle Woodland inhabitants of western Pennsylvania were extensively utilizing Vanport chert (Flint Ridge Flint) of Licking County, Ohio, only 19 Paleo-Indian artifacts were of this high quality material. There was a definite preference for the Coshocton County flints over those of adjacent Licking County. A similar pattern has been reported for Ohio (Seeman & Prufer 1982:159).

A small percentage of Paleo-Indian artifacts are of exotic materials and may indicate long-distance transport of materials or tools. The movement of lithic material from its place of origin is illustrated on Figure 5.2. Material from far distant sources such as Texas and South Dakota are not noted. The Coshocton flints were being transported possibly as cache blades or performs for distances up to 200 miles. Although several specimens recorded were obviously broken in fluting, only one perform of Coshocton flint has been recorded. An Amabel chert fluted point from Georgian Bay, Ontario, was transported over 300 miles and the jaspers and black chalcedony of south central Pennsylvania and possibly the Lehigh county jaspers were reaching points in western New york, north and western Pennsylvania: distances up to several hundred miles.

Figure 5.2

Paleo-Indian Lithic Materials Distribution


①
②
④
③
⑥
⑤
1. Amble Chert - Georgian Bay
2. Onondaga Chert - Western New York Ontario
3. Upper Mercer Chert - Coshocton County Ohio
4. Vanport Chert - Licking County Ohio
5. Yellow Jasper - Adams and Franklin Counties
6. Smoky Chalcedony - Fulton County?

Lithic materials used by Paleo-Indians are most important in defining their movements. Aboriginal knowledge of exposed strata of high quality materials seems more likely due to their personal encounters with various deposits rather than a trade system being established at such an early date. The importance of lithic sources in regards to group movements has been stressed by Witthoft, Ritchie, and other researchers (Witthoft 1971:63) (Ritchie 1965:8-9). It is quite obvious that Paleo-Indians were moving through western Pennsylvania from various directions, mainly from the west, north and to a certain extent, from the south central region of Pennsylvania. None of the available lithic sources in southeastern Pennsylvania were finding their way to the northwestern counties.

5.2.5 Paleo-Indian Utilization of Land Feature

5.2.5.1 Major River Valleys and Regions in Western Pennsylvania

Western Pennsylvania is drained by two major watersheds: the Lake Erie basin draining approximately 512 square miles and the Upper Ohio Valley basin draining approximately 15,600 square miles. Within the Lake Erie drainage there are only two recorded Paleo-Indian sites. One is located on the Lake Warren strand line near the Elk Creek outlet into Lake Erie with the second, located at the headwaters of Conneaut Creek, north of the Appalachian Escarpment. Two hundred and fourteen sites are recorded in the Upper Ohio drainage. Of those recorded, 82 are on the glaciated Appalachian Plateau, an area of circa 3,700 square miles, a density of one site per 45 square miles. Excluding the Lake Erie drainage from the total glaciated area, there are 80 sites recorded within 3200 square miles, a concentration of one site for 40 square miles. South of the glaciated region, an area comprising approximately 12,400 square miles, there are 134 recorded Paleo-Indian sites, a density of one per 94 square miles. This yields a ratio of densities of 2.3:1 for Paleo-Indian sites on the glaciated area to sites on the unglaciated region. Within the unglaciated Upper Ohio basin, there are no Paleo-Indian sites known within the circa 550 square miles of the Allegheny National Forest. This rugged, heavily forested region is largely unexplored, except for the excavation of some rockshelters. However, the occupational pattern in the similar rugged region of Washington and Greene counties suggests the Paleo-Indian must occasionally have penetrated this country.

The absence of Paleo-Indian sites within the Lake Erie basin presents a different problem. The author is of the opinion that in the absence of outwash terraces adjacent to major streams, kettle lakes, shallow post-glacial lakes, and extensive swamps, the game animals most important to Paleo-Indian hunters were not prevalent. It is also possible that during those critical millennia of Paleo-Indian activity in northern Pennsylvania, the Lake Erie basin was tundra, grading south into park tundra which afforded a migration route for caribou and other large mammals. According to Guilday, around 26 species were present during the late Plestocene. He suggests a mosaic of prairie, forest edge, woodlands, and open forests. All factors seem to point to the presence of a number of vertebrate species. (Guilday 1981:2-3). This, especially when considered with the glacial features such as the post-glacial lakes and swamps, would partially account for the Paleo-Indian artifacts along the Appalachian Escarpment and south to the Kent Moraines. The Lake Erie plain and south to the Appalachian Escarpment was probably a difficult passage from east to west or visa versa. During Paleo-Indian times this area most likely had already been divided north to south by deeply entrenched streams such as the Chautauqua Creek and gorge or Elk Creek and others. Therefore, the most likely migration route for man or animal to the "Allegheny Corridor" was along the escarpment.

If the Paleo-Indians occupied Lake Erie beaches on the south shore, now inundated by modern lake levels, it would have had to been during a very restricted time frame. At about 12,000 B.C. the Great Lakes area was under the Woodfordian Substage ice of the Late Wisconsin Glacier. Sometime after there was a major retrogression succeeded by a major ice advance that reached its maximum by 11,000 B.C., referred to as the Port Huron Maximum. During this time, a pro-glacial lake filled the Erie basin (Lake Whittlesey) to an elevation of 225 m. Between 11,000 and 10,500, this ice front retreated, succeeded by a series of fluctuating shorelines and lake levels, during which the south shore of Lake Erie would have extended some distance to the north, with water elevations dropping as low as 190 m above sea level. During these intervals, Paleo-Indians could have utilized these beaches. By circa 9,000 to 8,500 B.C. and during Lake Algonquin times, Lake Erie approached its modern elevations. At about 7500 B.C. melting ice opened an outlet near North Bay, Ontario, draining most of the Superior, Michigan, and Huron Basins: however, Lakes Erie and Ontario remained near present day levels. (Mason 1981:72-77).

It has been noted by Storck that Paleo-Indians, on sites now located in Canada, were utilizing the Lake Algonquin, Warren, and Whittlesey strandlines. However, it is believed the Paleo-Indians were not contemporaneous with the glacial lakes. Storck believes that, during the occupation of the late Paleo-Indian Hussey Site, the former lake bottom of adjacent Lake Algonquin was a swamp (Stork 1979:71-72). It is more obvious in northern Pennsylvania that the Paleo-Indians were using elevated areas near swamps and related glacial features and not strandlines associated with glacial lakes. Of the Maumee, Arkona, Whittlesey, and Warren strandlines in the Lake Erie Plain, only the Warren strandline shows evidence of occupation (one site recorded).

5.2.5.2 Stream Order and Paleo-Indian Associations

As part of the study, the association of Paleo-Indian sites with stream order was established. A stream with the order of 1 has an average length of one mile, whereas, an 8th order stream averages 336 miles. (Leet & Judson, 1971:230). For example, the Allegheny River below Franklin is a 7th order stream with a length of 136 miles.

The greatest association of Paleo-Indian sites was with 1st order streams, with 97 sites being located on these small headwater runs. Second order streams accounted for 50 sites and 34 locations were on 3rd order streams. Fourth and 5th order streams accounted for only 16 sites. The Allegheny River above Franklin, a 6th order stream, had 11 recorded Paleo-Indian sites in 90 miles, one site for each eight river miles, whereas, below Franklin only 3 sites are recorded in 136 miles, one site in 45 miles. Known Paleo-Indian sites are obviously more concentrated along the Allegheny

River in Pennsylvania above Franklin. This concentration continues into New York State. This author considers this partially the result of the upper Allegheny being utilized as a migration route. Only two Paleo-Indian sites are known on the Ohio River, an 8th order stream. Terraces below 20 feet above the Ohio River are deeply silted or have been destroyed by bank erosion, a result of navigation dams. The Transitional occupation of the Ohio view site (36BV9) was over 5 feet below surface. Higher terraces possibly used by Paleo-Indians, were industrialized in most cases by the turn of the century, thus destroying any evidence. The number of sites relative to stream order on or off the glaciated plateau, according to present data, is insignificant. First and second order streams on the glaciated plateau (50 sites) accounted for 61% of the total and off the glaciated region (98 sites) accounted for 74% of the total. The relationship of sites and small streams on the glaciated plateau implies that Paleo-Indians were selecting locations where small streams entered kettle lakes, shallow past glacial lakes, and swamps: all lowland areas where Paleo-Indians could obtain various game. In the unglaciated region, sites are located in high valleys or away from higher order streams and adjacent to small runs. These sites were originally at the small stream mouth during the late Pleistocene. However, downcutting of the higher order stream has lowered the base level and narrowed the channel, thus extending the length of the 1st order stream separating the site from the larger order stream.

5.2.5.3 The Utilization of Glacial Features

Within the glacial drift region of western Pennsylvania and the drainage basin of the Ohio River, Paleo-Indian sites were plotted on a map showing glacial deposits. Of the 82 recorded sites plotted, only one was on a ground moraine of the Illinoian Glacier. All others were associated with land features of the Wisconsin or combinations of both.

Forty-six sites were on undifferentiated outwash terraces of the Wisconsin and Illinoian deposits that are low and adjacent to water. Twenty-four other Paleo-Indian sites were on Wisconsin or Illinoian kames, kame terraces and moraines also quite low and often near water. Five sites were located on the earliest advance of Cory ice (Kent end moraines) deposited during Wisconsin times. These sites were at higher elevations as were seven others located on Kent ground moraines. The one site plotted on the Lake Plain was on the Lake Warren strandline of the Post Huron Substage of the late Wisconsinan. The Paleo-Indians were utilizing land features low and near water regardless of their glacial origin.

5.2.5.4 Site Locations with Regard to Relief

As previously stated, on the glaciated plateau there is a relationship of Paleo-Indian sites with glacial features such as kettle lakes, Pleistocene lakes now drained, swamps, outwash plains, moraines, kame terraces, and transported glacial debris along major drainages. This is more clearly illustrated by the elevations of Paleo-Indian sites in relation to the high and low relief available for occupation in close proximity. To determine this, the elevation of all sites was listed on a chart along with the highest and lowest elevations available within a half mile radius of the site.

On the glaciated Appalachian Plateau, 66 Paleo-Indian sites (80%) were located 30 feet or less above the lowest elevation within ½ mile. Sixteen sites (20%) were between 30 and 100 feet with only two of this number over 80 feet above the lowest relief. Higher elevations available within the ½ mile radius of all sites ranged from 790 to over 2,000 feet within the glaciated region with the highest elevations for the region as a whole, over 2,200 feet. If the height above water had been used rather than the lowest relief, 77 sites of the 82 would have been less than 30 feet above water.

In sharp contrast, Paleo-Indian sites in the unglaciated region were more erratic with regard to elevations, with fewer located on low terraces near water. Only 45 sites (34%) were 30 feet or less above the lowest relief available within a ½ mile radius. Thirty-one sites (24%) were from 30 to 100 feet above the lowest relief, whereas, 38 sites (29%) were 100 to 1,000 feet above the lowest relief. Higher elevations available within the ½ mile radius ranged from 730' to 2,700 feet above sea level. The highest elevations available for the region are over 3,000 feet above sea level.

The only sites comparable in terms of elevations above low relief were sites between 30 to 100 feet in elevation. Those on the glaciated region accounted for 20% and those off amounted to 24%. Most significant are the sites below 30 foot elevations: 80% for the glaciated region and only 34% for the unglaciated area. Significantly, there were no sites on the glaciated plateau over 100 feet above the lowest available elevation within the ½ mile radius and in the unglaciated region, 29% were above 100 feet.

5.2.6 Conclusion and Recommendations

The Paleo-Indian culture in western Pennsylvania, after years of collecting and recording sites, must be considered meagerly represented, with a site density of one site recorded for each 72 square miles. One research problem is this paucity of data, the result of natural processes over time and the alteration of land surfaces by modern man. Because of these destructive factors we are rapidly losing our data base in many prime Paleo-Indian habitation areas. The possibility of using this resource has been established by the author in the research for this paper. Collections are rapidly being lost through estate settlements and the movement of collectors out of the state. Therefore, it is imperative that Paleo-Indian artifacts and available data on Paleo-Indians recovered by collectors be documented.

Although several archaeological sites have yielded a quantity of Paleo-Indian material suggesting a permanent or reoccurring occupation, no well-defined sites such as Debert (Nova Scotia) or Vail (Maine) are known. With the present scanty evidence, no site in western Pennsylvania would warrant excavation. The concentration of material from surface-collected sites can only be established by the examination of all collections from that site. Otherwise, the discovery of a major site will probably depend on a chance discovery. Undoubtedly, deeply buried sites must exist on major streams and rivers; however, few professional surveys of these areas have been conducted.

In Paleo-Indian research in western Pennsylvania, we are dealing with three physiographical regions: the Lake Erie drainage basin, the glaciated section of the Upper Ohio River drainage basin, and the unglaciated section of this region. The importance of these divisions and their cultural differences has already been stressed in this paper. With few exceptions, Paleo-Indian sites on the unglaciated section of the Appalachian Plateau are at more diverse elevations with few areas of concentration. However, several stream valley terraces and adjacent upland locations deserve special consideration during routine survey work. Along Chartiers Creek and feeder streams in Washington and Allegheny Counties, 22 Paleo-Indian sites are recorded, one site for each 1.8 miles of stream. Several of these are considered camp sites. All, however, have been disturbed and their degree of stratification is unknown. Therefore, all contract survey work there should require more intensive investigation.

A cluster of seven Paleo-Indian sites is located on the Casselman River near Meyersdale in Somerset County. Any survey work in this confined area (several square miles) should be of an intensive nature. Twenty-four Paleo-Indian sites are concentrated in eastern Armstrong County and western Indiana County, especially along branches of the Little Mahoning and Plum Creek. Some of these may be major sites and should be tested for possible stratification. Collections from this area should be continually monitored.

Eleven sites are known along branches of the Connoquenessing Creek in Butler County. Collections from this area should be monitored until artifact concentrations from particular sites are determined. Some of these locations should be tested for stratification.

On the glaciated Appalachian Plateau sites are concentrated on glacial features near post glacial lakes, swamp, streams, and rivers. A major concentration in Crawford County is a classic example of such a setting. Twenty-four sites are known for townships in the Conneaut Lake, French Creek, and Sugar Creek areas. All survey work east and north of the Pymatuning Reservoir should require testing of known Paleo-Indian sites and collection survey work.

Immediately south of Waterford in Erie County is a cluster of six Paleo-Indian sites on glacial terraces along Lebouf and French Creek. These sites are not stratified (being essentially destroyed by continuous deep cultivation). However, all collectors working this area should be contacted during survey work.

The Allegheny River outwash terraces in Warren County are all areas of likely use by Paleo-Indians. Fourteen sites are known for the Pennsylvania section and major sites, such as Cornplanter, exist and require excavation. It is highly recommended that during survey work all terraces by tested for stratification and local collectors be contacted for newly acquired material.

It is likely that a major Paleo-Indian site will be discovered in the Crawford or Warren County area. Attention should be focused on slightly elevated areas on a large bench or glacial kame near a major swamp, kettle lake, or drained glacial lake. The Conneaut Lake area in Crawford County or the Lottsville area in Warren County are likely candidates.

Only one site has been recorded in the Lake Erie drainage basin. The author has conducted survey work along the Lake Plain for a number of years and found that although Early Archaic material is present, Paleo-Indian material is lacking. Inland on the drainage little survey work has been done and no collectors are known. Therefore, our information may be biased and further survey is needed.

Presently, the most likely area for Paleo-Indian activity in the Lake Erie drainage is the wide flat valley of Conneaut Creek that flows north from the escarpment for approximately 40 miles from Crawford into Erie County. This region is physiographically similar to the Conneaut Lake outlet area. No survey work is known for this area. Therefore, any future contract survey work in this area should include a collector survey.

5.3 The Archaic Period by Richard L. George

5.3.1 Introduction and Summary of Previous Research

The Archaic Period in the Northeast dates from approximately 8000 to 1000 B.C. Within the Allegheny Plateau subarea of western Pennsylvania there have been few problem-oriented excavations and most of our knowledge is, therefore, based on work in surrounding areas. To date, only one monograph (Mayer-Oakes 1955 b) on this long prehistoric era has been published for the Upper Ohio Valley. Little has been done to understand the Archaic cultural adaption to environmental change through time in this region. Surface collections and excavated artifacts from multicomponent sites, especially rock shelters, have indicated a considerable Archaic presence on the Allegheny Plateau but without comparative data from elsewhere in the Northeast not much would be known.

In the Northeast, the Archaic artifact assemblage has been recognized for its variety and quantity of chipped stone tools, lesser quantities and types of diagnostic ground stone tools, an extensive bone tool inventory and a lack of ceramics, smoking pipes and evidence of cultigens. The indications are that Archaic components on the Allegheny Plateau share these traits, although soil conditions have largely eliminated bone artifacts, faunal remains, and burials from the archaeological record. The following review will be based on published data on sites located on the Allegheny Plateau of western Pennsylvania. Where deemed necessary, information from adjoining regions will be utilized for better understanding of this long prehistoric sequence.

William A. Ritchie, New York State Archaeologist, was responsible for the recognition of the Archaic as a separate cultural entity in the Northeast. In a brief published account in the Pennsylvania Archaeologist

(Ritchie 1936:30), he extended the distribution of the Lamoka complex into Pennsylvania via the West Branch of the Susquehanna River. In the same year Mary Butler (1936:27) identified a cultural component in Erie County, Pennsylvania as Archaic Algonkin. Her designation was based on the presence of beveled adzes, crude choppers, and narrow bladed projectile points in surface collections from the county. The beveled adze was also used by Carpenter (1942:23) to identify Archaic sites in the Allegheny River valley of northwestern Pennsylvania. In the same brief paper, the author separated Archaic from Laurentian sites that contained semi-lunar knives and gouges that were considered diagnostic of the Laurentian complex isolated by Ritchie (1940) in New York state.

That the Brewerton Focus was the most dominant of Archaic complexes in western Pennsylvania was advocated by Stewart and Dragoo (1954) in a paper that described and illustrated surface collected artifacts from the Gay Shriver site in Greene County. Small, thick notched and stemmed projectile points were considered to be diagnostic of the Laurentian Archaic that preceeded Adena-Hopewell in the Upper Ohio Valley. In the late 1950's, two rock shelters were excavated in northern West Virginia by Carnegie Museum and these provided Dragoo (1959) with a body of data for comparison with other Archaic assemblages in the northeast. The Rohr rock shelter was the first site in the area to have its Archaic component C-14 dated (Dragoo 1959:238-239). Uncorrected dates of 2200 ± 60 B.C. (Y 484) and 1940 ± 70 B.C. (Y485) were similar to dates for Laurentian in New York. In the Upper Ohio Valley this basic Laurentian culture was seen to be locally modified and to have spread into the area from the northwest following the retreat of the Wisconsin ice sheet. A third C-14 date of 5310 ± 90 B.C. (Y486) was designated Early Archaic (Dragoo 1959:238).

In 1955, a synthesis of Upper Ohio Valley prehistory was published by Carnegie Museum (Mayer-Oakes 1955b). Archaic sites and artifacts were described and illustrated and a trait list of the Panhandle Archaic complex was published (Mayer-Oakes 1955:134-135). Much of the information was based on the Museum's excavation of the Globe Hill Shell Heap, Hancock County, West Virginia (Mayer-Oakes 1955a). Steubenville stemmed and lanceolate projectile points were described and attributed to this Archaic complex. Crescent-shaped bannerstones and flaked spoke shaves were also present on sites that the author considered to be derived from the late Paleo-Indian period. An alternate theory that advocated the relative lateness of Panhandle Archaic was published by Dragoo (1959:210 and 236-238). That the Panhandle complex was a late Archaic manifestation was confirmed by two C-14 dates: 2270 B.C. ± 500 (M229) for the east Steubenville site and 2170 B.C. ± 220 (CWR 184) for the Globe Hill site (Murphy 1977:19-20). Its relationship to other Late Archaic broad blade traditions such as Savannah River and Genesee was noted by Murphy (1977:23). Panhandle Archaic sites tend to be distributed in the southern portion of the Allegheny Plateau although more detailed distributional patterns are not available.

The wide spread Laurentian tradition continued to be identified in a number of reports. A survey of Erie County by members of the Erie Chapter, Society for Pennsylvania Archaeology, resulted in the recording of Archaic sites with Laurentian relationships (Robinson 1961). Sites were located on stream terraces and near the confluences of waterways in southern Erie County within the Ohio River watershed but seldom along the Lake Erie

Plain (Robinson 1961:153), although modern land disturbance could be involved in this distribution pattern. The identification of Brewerton projectile points in two Allegheny Plateau rock shelters was reported in 1975. Brewerton side-notched points and Otter Creek points were noted in the Wadding Rock Shelter sample by George and Bassinger (1975:17-19) and Laurentian manifestations at the Split Rock Shelter in Elk County consisted of Brewerton Side Notched and Corner Notched points and Otter Creek points (Herbstritt & Love 1975:30-35). Neither site was Carbon-14 dated.

Better understanding of Early Archaic sites and artifacts resulted from the publishing of the second preliminary report of the St. Albans site located in Kanawha County, West Virginia (Broyles 1971). Carbon-14 dating of a series of isolated strata from approximately 8000 to 6000 B.C. established a point typology series that was usable in the Allegheny Plateau area of western Pennsylvania. The distribution of Early Archaic projectile points, especially Kirk and LeCroy, in the Upper Ohio Valley was discussed by George (1971). Based on non-archaeological evidence from Carnegie Museums' work at New Paris, Bedford County, it was hypothesized that Early Archaic hunters were utilizing an environment that was essentially modern.

The University of Pittsburgh's investigation of the Boarts Site in Lawrence County, Pennsylvania resulted in the identification of a number of Early Archaic projectile point types including LeCroy and Kirk Corner Notched (Adovasio _et al._ 1974:39-41). Late Archaic and Transitional types were more numerous and were considered typical of the Laurentian and Panhandle Archaic complexes Adovasio _et al._ 1974:98). Middle and Late Archaic components were C-14 dated at the Meadowcroft Rock Shelter in Washington County during another University of Pittsburgh archaeological project. Middle Archaic point types included specimens similar to Stanley, Halifax and Morrow Mountain I (Adovasio _et al._ 1977:48-49) while other strata yielded Brewerton, Snook Kill, Normanskill, Savannah River types and others that resembled Lamoda and Vosburg points. The Late Archaic types are again believed to have close affinities to the Laurentian tradition of the Northeast (Adovasio _et al._ 1977:91).

Archaic projectile points were recorded during the Carnegie Museum of Natural History's 1977 excavation of the Late Woodland Bonnie Brook site in Butler County. Kirk corner-notched, LeCroy and St. Albans side-notched points were described and illustrated (Herbstritt 1981:18-20) as were two Hardaway-Dalton specimens. Late Archaic and Transitional forms were represented by Brewerton, Shriver expanded-stem and Ashtabula-like points (Herbstritt 1981:21-24).

Two other Allegheny Plateau investigations, although not as yet completely published, are included because they are considered steps in the right direction toward a better understanding of the Archaic. In 1978 George conducted a survey of Archaic-component sites in Somerset County, an area with a higher elevation than regions to the east and west. Based on a study of provenienced collections, an almost complete absence of Le Croy projectile points was noted although other early types such as Kirk Stemmed, Kirk Corner Notched and fluted points had broader distribution. (George 1979:7). Either the Somerset Plateau was not being exploited around 6000 B.C. or as yet unrecognized artifacts were being produced and used.

The excavation of a stratified Clarion River Floodplain site by Clarion State College indicated the presence of buried Archaic occupation strata in the Allegheny Plateau subarea. C-14 dates were obtained for several Archaic strata and another dated a Clovis-era hearth. (Konitsky 1979:57). It is this author's belief that deeply stratified floodplain sites hold the key to a better understanding of the Archaic.

5.3.2 Research Problems

Based on this brief review of the Archaic in the Allegheny Plateau subarea of western Pennsylvania, the following research problems can be suggested:

1. In order to better understand events during the Archaic, it is imperative that artifact typologies be better defined. The middle Archaic period is especially in need of definition. Much confusion has arisen recently concerning Archaic (and other) projectile point types due to a tendency to place Upper Ohio Valley specimens into type categories recognized and developed in areas spatially far removed. This imposition of inappropriate categories has been responsible for mis-naming specimens from non-stratified sites. It is imperative that more precise typologies be formulated through the excavation of multi-component sites with datable strata.

2. Distributional patterns of certain Archaic artifact types are only broadly understood. Closer attention should be directed toward distributional patterns and their relationships to varied topographic situations.

3. Analysis of Archaic settlement systems as related to paleoenvironmental exploitation should be initiated. Here, much would depend upon systematic investigation of Archaic site function within a restricted area such as a drainage system.

4. Continuity from Paleo-Indian to Archaic has never been adequately established in the Allegheny Plateau.

Efforts should be made to solve this problem through a program of investigation of deeply stratified sites on the floodplains of major streams. Likewise, it is this type of investigation that could result in a better understanding of terminal Archaic-Early Woodland continuity and change.

5. One of the more interesting problems concerning Allegheny Plateau Archaic has to do with the occurrence of Transitional sites and artifacts. Although poorly understood, this cultural complex, with its center in eastern Pennsylvania, made inroads into the western part of the state during the terminal Archaic period. These sites are confined to floodplains of major waterways in this area. The reasons for and results of this cultural movement are unknown at present.

5.4 The Woodland Periods by Verna L. Cowin

5.4.1 Early Woodland

Many factors cause confusion in drawing time boundaries and interpretations of Woodland sites in western Pennsylvania. Slow cultural change challenges a separation of an Archaic way of life (see Caldwell 1952) and the Early Woodland (ca 1000 B.C. to 100 B.C.). As traditionally defined, the Early Woodland was marked by mound building, the addition of pottery to the artifact inventory, and evidence of plant domestication. Classic Early Woodland Adena and Middle Woodland Hopewell cultures appear. These two cultures not only overlap in time but seemingly coexist with other Woodland populations who are affected by, but do not fully participate in, major burial ceremonialism. In many respects, much of the Archaic way of life continued.

The earliest dated ceramic vessel in the area is an ironstone-tempered Half Moon Cordmarked /Fayette Thick ware (Fetzer and Mayer-Oakes 1951) found in association with a squash seed (Cucurbita pepo) at Meadowcroft Rockshelter in Washington county (Johnson 1982:153-159). An additional Half Moon Cordmarked vessel, also in association with squash, was dated at 865 B.C.

Half Moon wares have been identified in Beaver County at the Georgetown (36 BV 29) and Ohioview (36 BV 9) sites (Mayer-Oakes 1955), in Allegheny County at the McKee's Rocks Mound (Dragoo 1963) and the Large site (36 AL 2) (Mayer-Oakes 1955), in Armstrong County at the Wadding Rockshelter (36 AR 21) (George and Bassinger 1975), in Elk County at Split rockshelter (Herbstritt and Love 1975) and at the Onoville Bridge Site in Crawford County (Dragoo and Lantz 1967). Mayer-Oakes (1955:214) notes the association of Half Moon Cordmarked vessels with Adena mounds and the relationship of the vessel form to the lugs and flat bases of the earlier soapstone pots. Johnson (1979:72) states that there is no evidence for burial ceremonialism directly associated with any Early Woodland complex in northwestern Pennsylvania, with the possible exception of a "Red Ochre" burial at Cornplanter Grant # 3 in Warren county. Lantz (1982:45) does report Cresap-type classic Adena blades found eroding from a possible mound in Warren County (36 WA 140).

Early Woodland pottery in usually flat-bottomed, thick walled, and of coil construction. Other markers for the time period are blocked-end tubular pipes and rell-shaped gorgets. A complete trait list can be found in Dragoo (1963).

Evidence for Early Woodland burial mounds is concentrated in the Ohio and Monongahela drainages. The most important is the now destroyed McKee's Rocks mound which is Adena with a Middle Woodland component (McMichael 1956).

A major archaeological research problem in western Pennsylvania is the determination of the economic base of the Early Woodland populations. Harvesting of wild plants, aquatic and faunal resources must have continued from the Archaic but the recovery of squash at Meadowcorft at 1115 B.C., 870 B.C. and 865 B.C. and corn at 375 and 340 B.C. (Carlisle and Adovasio 1982), document the presence of cultigens in the area. An effort should be made to concentrate on recovery of evidence for cultigens from Early Woodland sites.

Lantz (1982:45) reports on the association of Vinette I (Ritchie 1965:178) pottery with Early Woodland sites in northwestern Pennsylvania. Lantz has typed what is essentially a Vinette I vessel with oblique simple stamping as Jake's Rocks Simple Stamped. At the Jake's Rocks Overlook shelter (36 WA 39) this pottery was associated with several Fox Creek type projectile points. Lantz also points out that Vinette I-like pottery was found in association with Adena points at the Sutton Farm Site (36 WA 197).

Many of the Adena-Like points found during survey in western Pennsylvania were crudely fashioned and generally made on cores of available river pebble chert. The more classic Adena (Mayer-Oakes 1955) points are recorded as single finds on multi-component stations. A large number of Adena Stemmed points, often of Flint Ridge chert have been noted in collections from Crawford and Erie counties (Johnson 1979). These classic Adena points are frequently found in lowland marshes and valley settings. Johnson also notes that the frequency of Adena points in northeastern Pennsylvania declines from west to east while there is an increase in the incidence of Meadowood (Ritchie 1971) and "Forest Notched" (Mayer-Oakes 1955) points from west to east.

Lagoon and Rossville points (Ritchie 1971) are also found in major western Pennsylvania collections and were found at the Wadding rockshelter (36 AR 21) (George and Bassinger 1975).

5.4.1.1 Recommendations

(1) The "Forest Notched" points should be adequately described as a type. Excavation of a known "Forest Notched" station would be advisable in order to obtain a radiocarbon date.

(2) A distributional study of the classic Adena material should be undertaken to allow comparisons with the distribution of Meadowwood, Lagoon, "Forest Notched" and Rossville types.

(3) A lack of radiocarbon dates and subsistence information from Early Woodland sites suggests that multi-component sites with strong evidence of Early Woodland occupation be given high priority status and protection and that projects affecting Early Woodland sites should require extensive testing and/or excavation with funding for analysis and radiocarbon dates. The testing and excavating should concentrate on sophisticated retrieval of floral and faunal remains in order to gain an understanding of the subsistence base.

5.4.2. Middle Woodland

This period dates ca. 100 B.C. to A.D. 900 and the associated burial ceremonialism has been described in Carpenter (n.d.) and McMichael (1956). Cowin (Applegarth and Cowin 1982) reports radio-carbon dates of A.D. 530 ± 115, A.D. 790 ± 110 and A.D. 850 ± 90 for the Avella Mound (36 WH 415) in Washington county. No ceramics were found at the Avella Mound but a new projectile point type, Bennington Corner Notched, was associated with the A.D. 750 date.

Bennington Corner Notched, was associated with the A.D.

750 date. Bennington Corner Notched points occur in strata V (A.D. 285) and IX (Late Woodland) at Meadowcroft rockshelter (Carlisle and Adovasio 1982).

Classic Middle Woodland is documented at the numerous Buckaloons sites near Irvine, Warren county, at the confluence of the Brokenstraw Creek and the Allegheny River (Lantz 1975). The sites and seven mounds have produced exotic flake knives of Flint Ridge chalcedony, fragments of sheet mica, Manker Stemmed, Manker Corner Notched, Chesser Notched and Snyders points. The points are predominately exotic Ohio materials but some local Pennsylvania lithics were also utilized. Lantz (1982:51) reports a date of A.D. 400 for 36 WA 29, one of the Buckaloons occupations.

Another Hopewell-like mound on the Allegheny River, Sugar Run (36 WA 2) was investigated by Carpenter (n.d.) and an associated village was excavated by the Kinzua Chapter No. 18, Society for Pennsylvania Archaeology.

Lantz (1982) points out that the evidence for Hopewell occupation in northwestern Pennsylvania indicates that the classic Middle Woodland artifacts are directly associated with mounds, as at Sugar Run and Buckaloons. However, no mounds have been found in association with what he describes as a local Middle Woodland culture which used local lithic material and made undecorated plain or corded pottery.

Johnson, Richardson and Bohnert (1979) also see evidence for two Middle Woodland groups in northwestern Pennsylvania. They separate occupations on the Glaciated Allegheny Plateau into two groups, one with earthen burial mounds with interior slab walls, cists, paving or rings, grit tempered pottery which is primarily fabric impressed, and exotic Hopewellian artifacts found in both mounds and habitations. Another culture they refer to as Ohio Valley Middle Woodland with stone burial mounds, cordmarked-limestone tempered ceramics and little exotic material. This latter group has a wide distribution in western Pennsylvania with sites located on terraces above major and minor drainages.

The best known site with stone slab association is the Watson Mound and village (46 Hk 34) in Hancock county, West Virginia. Excavations were carried out by Dragoo (1956) and the University of Pittsburgh (Maslowski 1973, Munson and Munson 1972). The Watson ware is found throughout western Pennsylvania in both rockshelters and open sites.

5.4.2.1 Recommendations

A major research problem is the separation of the Middle Woodland populations. Distributional studies are currently underway by the author as part of the interpretation of the Avella Mound. Paucity of subsistence data dictates that Middle Woodland sites be high priority for protection. Mandated contracts for federally funded projects should stipulate that testing and excavation be oriented toward the retrieval of subsistence information. Contracts should include funds for analysis and radiocarbon dating.

Currently recorded habitation sites must be protected and future survey should concentrate on locating Middle Woodland habitation sites. Every effort should be made to determine the best available Middle Woodland stations, test for site boundaries and nominate qualifying sites to the National Register.

The temporal position of the undescribed "Raccoon Notched" points (Mayer-Oakes 1955) is not yet defined. These points are well made, generally of exotic flint and thin in cross section. The points are found on both Middle and Late Woodland sites and a date of A.D. 920 has been reported by Lantz (1982). Some research should be directed to economic studies of Jack's Reef/"Raccoon Notched" stations to gain understanding of continuity and change.

5.4.3 Late Woodland

The western Pennsylvania Late Woodland is generally dated A.D. 900 to A.D. 1600 and begins with a decline in burial ceremonialism. Special treatment is generally reserved for child burials where the use of stone slabs persists. The period is characterized by triangular projectile points and strong evidence for agriculture.

In northwestern Pennsylvania, two populations were exerting influence along the Allegheny River Valley (Lantz 1982) (Johnson et al. 1979): the Allegheny Valley Iroquois and what Lantz has named the Mead Island Culture.

Dates on the Allegheny Iroquois range from A.D. 970 to A.D. 1430 (Lantz 1982). These sites are located on floodplains, river terraces or on the lowest valley trains. The Mead Island Culture was described from sites concentrated along the Allegheny River below Warren county. The geographic boundaries of the distinctive ceramics are yet unknown but the influence is seen as far south as Indiana county at the excavated but unreported Mary Rinn Site (36 IN 29). Mead Island vessels are predominately tempered with crushed igneous rock but some do evidence shell tempering. Bases are almost all conical and rims vary from constricted to slightly flaring. Occasional incipient castellations and oblique-slashed collars and small lugs have been noted (Lantz 1982), as has the relationship to Chautauqua and Wetfield corded types. Houses are round with a large, cylindrical storage pit. The Mead Island site dates ca A.D. 1040 (Lantz 1982) and the lithic diagnostics include large, Madison-type points. Figures 5.3 and 5.4 delineate the western Late Woodland cultures as the boundaries are currently understood.

Allegheny Valley Iroquois sites are distributed from the Kinzua Basin up into New York with the typical longhouses, generally in stockaded villages with mosts set in a trench. Ceramics have granite or grit temper with cordmarking or corn cob impressions. A small percentage of simple stamped or basket impressed wares is also present.

Sites along the Lake Erie Plain have been designated as Proto-Erie by Johson et al. (1979). Ceramics from these sites show reationships to the Allegheny Valley Iroquois. Some of the recorded sites appear to be small fishing stations but early recorded year-round fortified villages are

Figure 5.3

Early Late Woodland Period Phases

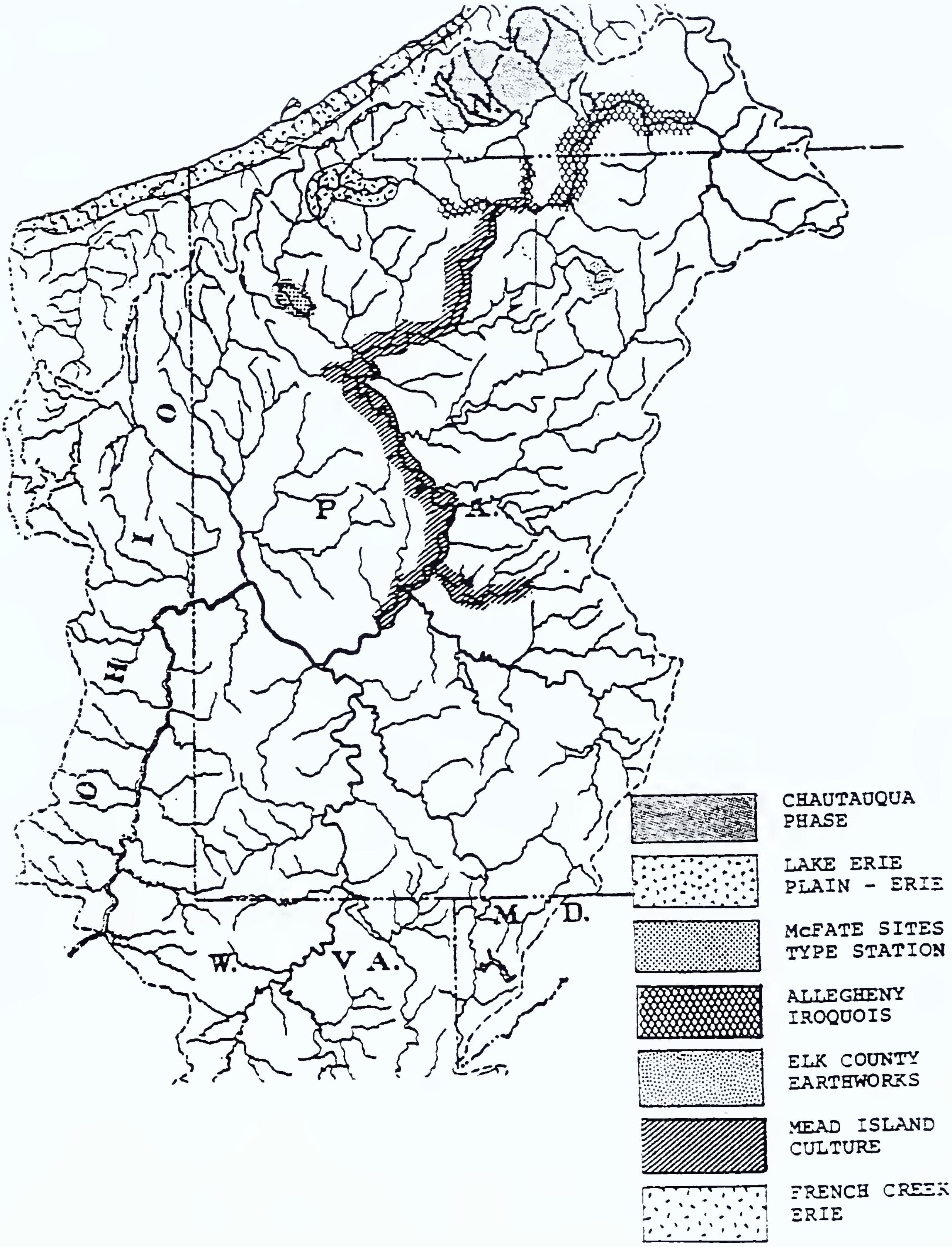
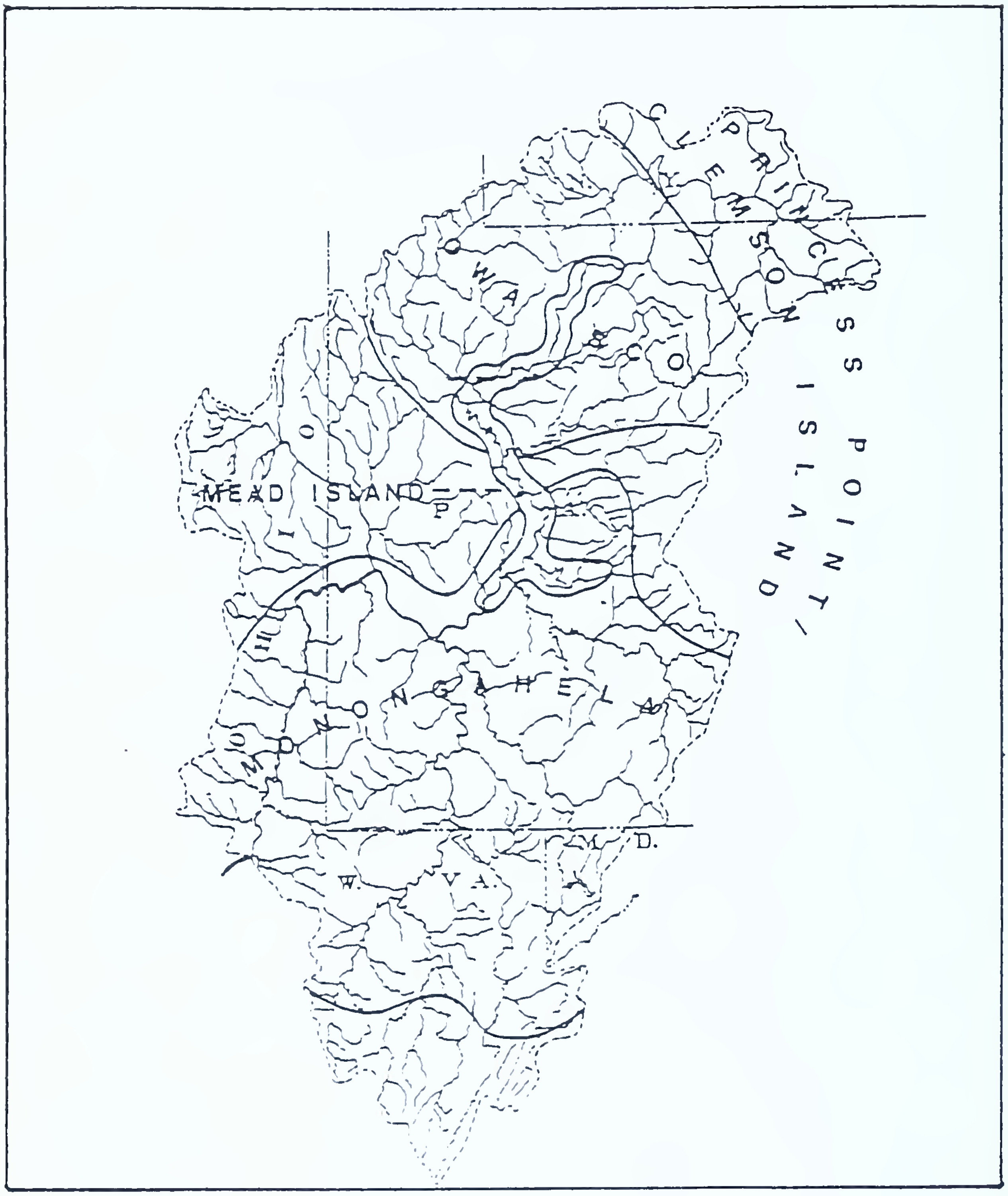


Figure 5.4

Late Woodland Groups



classed as earth circles and include Wickersham (36 ER 4), Wheeler (36 ER 3) and Wintergreen Gorge (36 ER 6) (Mayer-Oakes 1952, Lantz 1982).

Lantz (1982) has linked a series of sites associated with the Presque Isle Portage (Wallage 1965) in the French Creek Valley to the Proto-Erie.

Lantz's chronology of Iroquois Villages in western Pennsylvania illustrates a series of dated Iroquois villages which begin with the Vanatta (36 CA 46) Site (corrected) date of A.D. 970 and end with Sugar Run (36 WA 2) Site's date of A.D. 1430 (corrected). Obtuse elbow ceramic pipes, a range of broad triangular points and knives are additional Allegheny Iroquois diagnostics.

Lantz also separates out a Chatauqua Phase with small triangular points, basically shell tempered pottery and square bowl and conical pipes.

The presence of the much discussed McFate Phase has been documented on both the glaciated and unglaciated Allegheny Plateau (Mayer-Oakes 1955, Smith and Herbstritt n.d., Johsnon 1979, and Lantz 1982). Herbstrtitt (n.d.) notes that McFate populations were intensively utilizing cultigens and that villages evidence long term occupation. Herbstritt dates McFate between the 15th and 16th centuries and Johnson 1979) reports a date on McFate incised ceramics at the East Wall site at A.D. 1530.

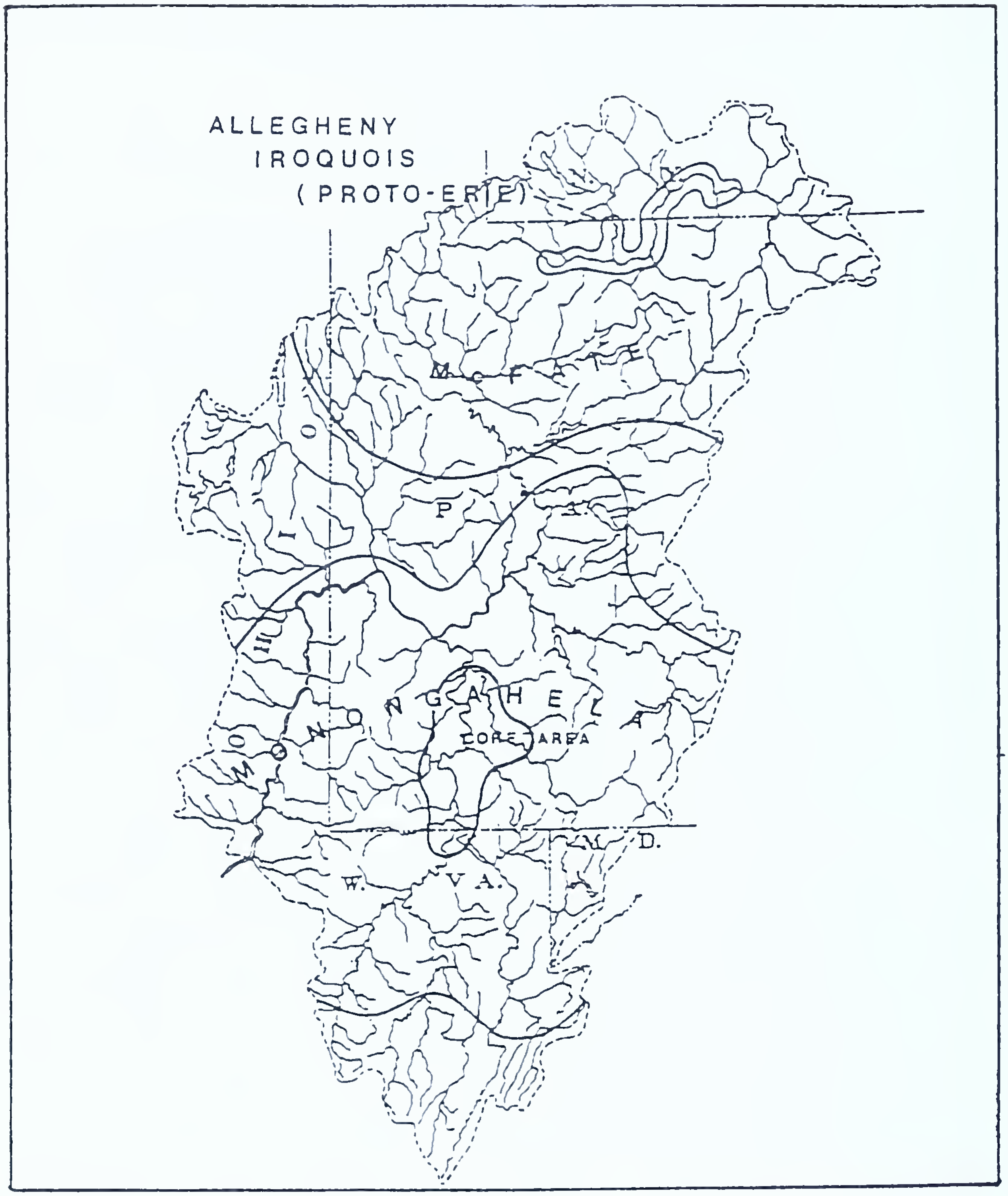
Early investigations into the Monongahela Culture was initiated by George S. Fisher who investigated a number of "shell sites" and later worked with Robert Engberg to investigate large burial and settlement locations. The Pennsylvania Historic and Museum Commission later supported additional work in Somerset County which was followed by the Works Progress Administration excavations reported in Three Archaeological Sites in Somerset County, Pennsylvania. This work established the "Monongahela Woodland Culture." Mayer-Oakes (1955) later published a trait list and noted a relationship of Monongahela to Fort Ancient. Information was added by Dragoo (1955), Buker (1970 and 1975) and George (1974 and 1978 a and b), adding the Drew, Middle Monongahela, Johnston and Somerset Phases. Recent work by Herbstritt (n.d.) has added the Foley Farm Phase to the literature.

Monongahela sites are found over much of western Pennsylvania with the northern most extension being in Butler county. The core area centers around the Monongahela/Youghiogheny heartland (Figure 5.5). Fort Ancient affinities are suggested in the use of shell temper and the presence of well fashioned cannel coal claw and canine tooth pendants. Sites occupy terraces as well as upland locations at springheads, benches, saddles and hilltops. Villages are circular or oval with closely-spaced relatively small stockade posts surrounding circular, appenaged houses arranged around a central plaza. Stockade walls usually have an associated trench. Burials are generally within the village or a village structure and are mostly primary and flexed but extended burials are also present.

Ceramic vessels are elongated and bag shaped. Limestone temper is typical of the early examples while shell temper appears in the later phases

Figure 5.5

Late Woodland Groups



(R. George, personal comm.). The sequence of available radiocarbon dates range from the 10th to the 16th centuries A.D.

5.4.3.1 Recommendations

Additional survey and test/excavation work is necessary in the area between the West Branch of the Susquehanna River and the Allegheny drainage. Yet unpublished work by Herbstritt in Clearfield county may help establish connecting links and cultural patterning between the drainages. Additional work is needed to lend understanding to the many Late Woodland Phases. Settlement pattern-oriented excavations are needed to differentiate between ceramic associations and long and oval/circular house patterns.

Excavated and unreported sites such as the Mary Rinn site (36 IN 29) excavated by Indiana University of Pennsylvania and the vaguely reported stratified sites excavated and dated by Clarion University of Pennsylvania hold keys to some of the unanswered questions. Some requirements, or at least standards, which would encourage the full publication of state institution field school activities should be devised.

An intensive study should be begun on contact period sites and historic period sites evidencing occupation by displaced groups from the eastern sections of the state.

While many Monongahela and Late Woodland villages have been archaeologically investigated, many questions remain and the major "phase" loci should be tested for boundaries and nominated to the National Register.

5.5 The Historic Period by Christine Davis

5.5.1 Introduction: Historic Period Archaeological Resources

A cursory review of the sites recorded on the Pennsylvania Archaeological Site Survey revealed that only 267 or 5.1% of the 5,168 sites in Western Pennsylvania were designated as Historic (Table 5.3). The task of reviewing site survey forms was limited to noting primary recorded information and did not include a search for additional information that might be found in files, addenda, and publications. The three counties with the highest percentages of recorded historic sites were surveyed by professional archaeologists. G. Konitsky's survey of iron furnaces in Venango Count; James Richardson, Stanley Lantz, and Verna Cowin's work in Cambria County; and Jude Kirkpatrick and Stanley Lantz's work in Erie County are responsible for these high percentages. The remainder of site file entries are a potpourri of micellaneous properties encountered during contracts and survey of recorded through individual effort.

The sites were categorized as follows (Table 5.4): Contact, Domestic, Urban/Disposal, Military, Industrial, Transportation, Commercial and Unknown. Due to a high percentage of iron furnaces, the Industrial category contained the most recordings. It is interesting to note that at

TABLE 5.3

Western Pennsylvania Historic Archaeological Sites
January, 1982 *

County	Total Sites Recorded	Total Historic Sites	% Historic Sites
Allegheny	250	19	7.6%
Armstrong	243	6	2.5%
Beaver	224	6	2.7%
Bedford	70	1	1.4%
Blair	24	0	0
Butler	153	12	7.8%
Cambria	137	15	10.9%
Cameron	49	3	6.1%
Clarion	200	9	4.5%
Clearfield	8	0	0
Crawford	346	2	0.6%
Elk	51	0	0
Erie	178	20	11.2%
Fayette	322	19	5.9%
Forest	18	1	5.5%
Greene	170	4	2.3%
Indiana	296	20	6.7%
Jefferson	85	5	5.9%
Lawrence	93	4	4.3%
McKean	12	1	8.3%
Mercer	159	5	3.1%
Somerset	182	11	6.0%
Venango	226	27	11.9%
Warren	216	14	6.5%
Washington	918	33	3.6%
Westmoreland	538	30	5.6%
TOTALS	5,168	267	5.1%

*Carnegie Museum of Natural History-Site Record Files

TABLE 5.4

Historic Archaeological Sites By Type

Type:	Number	Total
CONTACT		
Contact Sites	18	
Contact Sites ?	12	30
DOMESTIC		
18th Century Farmsteads	10	
19th Century Farmsteads	33	
Domestic, not dated	12	
Domestic, 20th century	3	58
URBAN/DISPOSAL		
Urban	6	
Disposal	3	9
MILITARY		
French and Indian War	13	
War of 1812	2	
Revolution	11	26
INDUSTRIAL		
Grist and saw mills	17	
Iron Furnaces	39	
Potteries	8	
Tanneries	2	
Glassworks	2	
Brick Kiln	1	
Blacksmith Shop	1	
Petroleum Industry	2	
Coal/Coke	1	73
TRANSPORTATION		
Taverns	9	
Hotels	2	
Abandoned villages	3	
Bridges	4	
Dams	1	
Railroad Tunnels	3	
Inclined Railway	1	
Railroad associated	1	
Trail scars	2	

TABLE 5.4

(cont.)

Type:		Number	Total
COMMERCIAL			
	Department Store	1	1
INSTITUTIONAL			
	Cemeteries	7	
	Churches	1	
	Religious Sect, structure	1	
	Crematory	1	
	Educational	1	
	Private Institution	1	12
UNKNOWN			27
PETROGLYPHS:	CMNH File (Historic)	4	4

least 184 iron furnaces are known in the region (Sharp and Thomas 1965) but only 39 are recorded.

Although 30 sites are listed as "contact", this cultural affiliation is all too often based on a surface-collected gunflint or on tradition. Considering only the recorded information and without further field investigation, few of these "contact" sites could actually be considered late 17th and 18th century native American towns and campsites.

The lack of historic sites represented on the archaeological survey is due to such factors as industrial and agricutural impact, survey bias, and lack of interest. The recording of historic and industrial sites would serve research goals of local archaeology more effectively if specific forms and guidelines were prepared. Site information, for the most part, is inadequately recorded on forms originally designed for prehistoric sites.

Major problems in recording sites include: the need to differentiate between standing structures and ruins, to detail presence of any associated structures and/or ruins, and to establish minimal guidelines as to what criteria justify the recording of a historical archaeological site. Currently, some sites are classified as historic based on the finding of a few 19th or 20th century ceramic sherds in a cornfield. It is recommended that a site survey form specifically for historic archaeological sites be developed.

5.5.2 Land History

Western Pennsylvania's geographic position determined its role in the struggle for land control by the French, English and native Americans in the mid-eighteenth century (Table 5.5). Although Western Pennsylvania remained under the jurisdiction of the Iroquois, three states laid claim to lands in the Upper Ohio Valley. Connecticut claimed most of northern Pennsylvania; Maryland claimed southern Pennsylvania through present-day Somerset County; and Virginia extended her boundaries to include southwestern Pennsylvania (Russ 1966). By 1751, France attempted to assert her claim to Western Pennsylvania by the construction of a series of forts. A three-year uncontested French occupation west of the Alleghenies was military in character, and no French agricultural settlements were attempted in the region (D. Kent 1954).

After Braddock's defeat in 1755, the English renewed their efforts to establish control of the west by the construction of the frontier forts. The new campaign, under the direction of General John Forbes, established Fort Bedford and Fort Ligonier and surveyed for a new road. In 1759, after the French and Indian War, the French forts were abandoned and British control established.

In order to maintain British domination in the west, Fort Pitt was constructed and a small population of 630 persons lived at the forks by 1763 (Lorant 1964). Potential settlers arrived from the east and south. When the Six Nations, who still retained ownership of the region, registered complaints with British authorities, Henry Bouquet attempted to prevent the "vagabonds" from settling. However, major British victories in the west

Table 5.5

Western Pennsylvania Historic Chronology

1710 - 1750	Contact and Commerce
1750 - 1758	First attempts at permanent settlement
1758 - 1759	French and Indian War
1759 - 1767	Military occupation
1768 - 1775	Permanent agrarian settlements
1776 - 1783	Revolutionary War
1783 - 1812	Expansionist Period
1812 - 1815	War of 1812
1815 - 1861	Industrial Revolution
1861 - 1863	Civil War
1863 - 1875	Industrial Expasion and Urbanization
1875 - 1900	Gilded Age

motivated Pontiac to join Indian forces together in a final attempt to retain control of southwestern Pennsylvania. His ambitious plans were initiated in May of 1763 and, within months, western Pennsylvania was abandoned by European settlers save for those sheltered at the frontier forts. The battle of Bushy Run marked the turning point in Pontiac's War, and Bouquet's success enabled him to push westward. At the Treaty of Fort Stanwix, the Six Nations relinquished all the land from Kittanning to an area south of the Ohio River (Hunter 1978).

When the land office opened in 1769, George Croghan reported that four to five thousand settlers had moved into southwestern Pennsylvania. By 1771, 10,000 families of principally German, Scotch-irish, and English background, resided in the west (Buck and Buck 1939).

Although the Allegheny River had been explored and fur trading established there, few colonists ventured into the dense wilderness of northwestern Pennsylvania. The "last purchase" of 1784 defined the boundaries of the Fort Stanwix and Pine Creek treaties, and northwestern Pennsylvania was purchased. The Erie Triangle purchase completed the northern boundary in 1792. With new lands now available, the state legislature initiated a plan to dispose of the properties. Bills of credit were given to members of the Pennsylvania Line as payment for services during the Revolutionary War. As the war drew to a close, the bills rapidly depreciated in value. To replace the value of the certificates, the State devised a system for offering state lands for sale through the issue of "Depreciation Certificates" used for land purchases. Surveyors laid out tracts of land in lots of 200 to 350 acres with each tract receiving the name of the surveyor who laid it out.

The Donation Lands were properties offered to Revolutionary veterans as recognition for their services and were distributed by lottery. After exploration by General William Irvine, some of the Donation lands were determined to be unsuitable for agriculture and Irvine suggested the elimination of these properties from the lottery. These tracts of land became known as the "Struck District" and were later sold by the warrant/patent system. Once Pennsylvania settled the Donation and Depreciation land claims, the remaining vacant lots were offered for public sale as a provision of the settlement Act of 1792 (Sipe 1927).

The Donation Lands, the "Struck District", Depreciation Titles, old military permits, new descriptive warrants, shifting locations, New Purchase titles and Penn family grants created numerous conflicts and confusion, dicouraging many settlers interested in permanent settlement in the northwest. Whereas the Settlement Act of 1792 was written to support the permanent farmer and discourage absentee landlords, the law was laced with loopholes. Fortunes were amassed and lost by land speculation during the period from 1790 to 1805 (Fletcher 1950).

The boundaries of Western Pennsylvania were now legally established and a permanent agrarian society inhabited its lands. Table 5.6 details the organization of the western Pennsylvania county system.

TABLE 5.6

County	Date Organized	Parent Counties
Allegheny	1788	Westmoreland, Washington
Armstrong	1800	Allegheny, Westmoreland and Lycoming
Beaver	1800	Allegheny and Washington
Bedford	1771	Cumberland
Blair	1846	Huntingdon and Bedford
Butler	1800	Allegheny
Cambria	1804	Huntingdon and Somerset
Cameron	1860	Potter, Clinton, McKean, Elk
Clarion	1839	Armstrong and Venango
Clearfield	1804	Huntingdon and Lycoming
Crawford	1800	Allegheny
Elk	1843	Jefferson, Clearfield, McKean
Erie	1800	Allegheny
Fayette	1783	Westmoreland
Forest	1838	Jefferson
Greene	1796	Washington
Indiana	1803	Lycoming and Westmoreland
Jefferson	1804	Lycoming
Lawrence	1849	Mercer and Beaver
McKean	1804	Lycoming
Mercer	1804	Allegheny
Somerset	1795	Bedford
Vanango	1800	Allegheny and Venango
Warren	1800	Lycoming and Allegheny
Washington	1781	Westmoreland
Westmoreland	1773	Bedford

5.5.3 Architecture

The diversity of cultural heritage and settlement of Western Pennsylvania had its architectural expression. From 1720 to the onset of the Revolutionary War, the Trade system involving Europeans and Indians thrived in the west and was responsible for the first architecture. Before the French arrived at Fort Duquesne, Scottish trader, John Frazier, constructed an "English house" at Venango; Englishman Christopher Gist had a "plantation" near Uniontown; and George Croghan, an Irishman, had constructed a large log house and a number of "stores" along the major rivers. With the establishment of trade networks in the west, agricultural settlers trickled into the region from the south. These early attempts at agrarian settlement were short-lived and inadequately reported, if at all.

The military occupation of Western Pennsylvania resulted in the construction of impressive examples of military architecture. Fortified houses, stockades, and blockhouses provided a defense system for colonists (Stotz 1966). Major fortresses were built by both French and English in the Upper Ohio Valley. Over 100 examples of these defense structures are known in Western Pennsylvania and several have been archaeologically investigated.

The early settlement period is characterized by the "architecture of the forest" (Stotz 1966) and the use of simple technology in the construction of dwellings. Makeshift shelters of poles and bark housed the settler until lands were cleared and a log dwelling could be constructed. Small log houses with wooden chimneys or simply a hole in the roof for smoke were inhabited by even prosperous colonist (Buck and Buck 1939) while log taverns, functioning as residential, commercial, and even political centers, were often substantial, well crafted structures.

After the Revolution and the arrival of skilled masons, carpenters, and plasterers west of the Alleghenies, architectural style developed. Every phase of eastern and southern architecture emigrated to the west with the settlers and their diversified cultures Virginia settlers influenced the southwest; Maryland's emigrants brought their style into Bedford, Blair and Somerset counties; and New York and New England influences arrived in the north. Sophisticated facets of the Georgian and Federal styles were evident in the field stone, brick and frame residences of the post-colonial period. In the Georgian form, the entranceways were emphasized with columns or pilasters and the addition of a decorative light above the door. An independant American architecture was introduced with the Federal style characterized by its elegance and symmetry. Simple lines and white paint reflected the egalitarian ideals of the Englightenment and an architecture available to all classes.

Military sites once more were constructed in Western Pennsylvania during the Civil War. A series of defenses, forts, artillery, batteries, rifle pits and redoubts encircled Pittsburgh as a defense system for this major industrial center. The locations of three of these features are known (Richarson and Carlisle 1977) but as yet are unrecorded on the Archaeological Survey.

In Western Pennsylvania, the Early Victorian Gothic Revival style is principally confined to religious structures built ca. 1850-1860 (Stotz

1966). The pointed spires and windows characteristic of this style are seen in some residential structures in the urban Pittsburgh neighborhoods but rarely in rural areas (Van Trump and Ziegler 1967). Italian Villa and Romanesque styles with three or four storey towers and arched openings again reflect the urban nature of the growing region. Small country churches are vestigal examples of the Romanesque element in rural areas.

The maturity of Western Pennsylvania's industrial and cultural development and its obsession with iron and steel is evident by the popularity of the Richardsonian Romanesque style. This rugged, solid style was used for a variety of public, ecclesiastical, commercial, industrial, and domestic structures. The Allegheny Courthouse and Jail remain one of Henry Hobson Richardson's most significant accomplishments (Van Trump and Ziegler 1967). The use of cast iron for both support and ornamentation also increased during this period.

Tall buildings of steel frame construction characterized the commercial and industrial architecture of the early twentieth century. Millionaires, created by the iron and steel industries, lavishly decorated their townhouses and manorhouses. The differentiation of wealth during the Guilded Age is epitomized by the mill villages, rowhouses, the boarding houses of the thousands of immigrant laborers. Neighborhoods and villages acquired an ethnic character.

5.5.3.1 Research Requirement

County-wide surveys of historic standing structures have been undertaken in Western Pennsylvania and architecture is, for the most part, carefully documented and photographed. However, the potential for associated archaeological sites such as carriage houses, barns, privies, wells, and summer kitchens is vast. The regional diffusion of architectural style provides insight into the culture process of a community as land use patterns developed as a result of access to land and natural resources. Understanding these patterns is an important archaeological problem.

Critical to the interpretation of historic archaeological sites is the preservation of court house records and those in other private and public collections. These primary research sources are currently in a state of deterioration and neglect in many counties. Documents are freely open to the public regardless of their fragile condition and are often housed in areas where little or no supervision is present. Many records are missing, damaged or misfiled. A state-wide program for the conservation and preservation of these documents is essential.

Over 100 forts were located by Albert (1896) in Western Pennsylvania. The archaeological survey includes only a total of 26 sites from the military occupation (13 from the French and Indian War, 11 from the Revolution, and 2 from the War of 1812). However, several important archaeological excavations have taken place at major fortress sites and published reports are available. Archaeological evidence of trading posts, advance posts, blockhouses, and stockades is lacking. The complete interpretation of the military effort during the last half of the 18th century is dependant upon knowledge of provincial defense systems. Civil War fortifications should be recorded if their archaeological integrity has not been destroyed.

5.5.4 Institutions

Religious dissension and the quest for religious freedom were important factors in the western migration of the 18th century. The opportunity to become landowners gave the new immigrants a freedom to express religious preference. Some of the earliest attempts at agricultural settlement in the west were by members of religious sects who did not require churches and ministers to practice their beliefs. Open air meetings by traveling ministers soon evolved into congregations who developed the first log churches as social, religious, and educational centers of frontier communities. The largest congregations were those of the Presbyterians: the Synod of Pittsburgh became the "center of Presbyterianism in America" (Crawford and Brown 1965).

By 1799, Father Demetrius Gallitzin had begun a Catholic congregation in Loretto, Cambria County. Gallitzin's congregation consisted of 40 families but "there is no end to the Catholics in all the settlements around" (Buck and Buck 1939). With the German immigrants came the German Reformed and Lutheran churches.

A significant religious sect in Western Pennsylvania was located in Butler County in 1804. Known as the Harmony Society this religious community developed a prosperous agricultural enclave and was responsible for the construction of some of Western Pennsylvania's most interesting early architecture (Stotz 1966). The Harmonists remained in Butler for only eleven years but later returned to Western Pennsylvania in 1825 to establish Economy in Beaver County.

By 1835, the following congregations had formed in Pittsburgh: Presbyterian, Methodist, German Evangelical, Protestant Episcopal, Roman Catholic, Unitarian, Baptist, Christian, and the African Methodist Episcopal. The churches which housed these congregations are some of the finest representatives of Western Pennsylvania's early architecture.

Cemeteries associated with the churches are important as sources for genealogical information and stylistic change. They may also represent the only extant component of an abandoned community. Ethnic churches in industrial western Pennsylvania significantly contributed to the preservation of the ethnic enclaves and culture of their congregations. Rather than attempt to "Americanize" their people, the churches remained a haven of Old World social, religious, political and educational values for the immigrants.

During the early settlement in Western Pennsylvania, Pittsburgh became the cultural center of the west. The first newspaper west of the Alleghenies was published in Pittsburgh in 1786, and twenty years later, Pittsburgh was supplying books for the education of settlers in the Ohio territory (Crawford and Brown 1965). A public academy, a number of English schools, a seminary for young ladies, a society for the advancement of natural history, and a circulation library (Anderson 1931) were located in Pittsburgh during the first quarter of the 19th century.

In the Northwest, academy lands were surveyed and state provisions made for religious and educational institutions (Klein and Hoogenboom 1980). However, before tax-supported public education was legislated in 1834, education was primarily supported by churches and communities. It was not until after the Civil War that public education developed and not until 1890 that public high schools became part of the system.

The rural one-room schoolhouse was important in American culture and prevalent in the Western Pennsylvania landscape. By 1915, there were 10,606 one-room schoolhouses in Pennsylvania (Klein and Hoogenboom 1980). After the consolidation of school systems, these structures were abandoned and often purchased by a local farmer who incorporated them into his farmstead.

5.5.5 Mercantilism and Commerce

Navigable streams as avenues for communication and trade maintained the vital link for development of commerce throughout Western Pennsylvania's history. Before European traders crossed the Alleghenies the first commercial enterprise in the New World, the fur trading business, had a profound effect on indigenous populations. The quest for new hunting territories and increased European trade goods resulted in the Beaver Wars. By the late 17th century, the Iroquois had not only forced out the prehistoric populations in Western Pennsylvania but held the "balance of power" between French and English commerce in the New World (Sipe 1931). The exodus of native American cultures from Western and Central Pennsylvania left the southern border of Iroquois territory uninhabited. Contemporaneously, the Delaware, Shawnee and other eastern groups became refugees as they were uprooted by European colonization. In the first quarter of the 18th century, these groups found refuge in the Upper Ohio Valley. The western representatives of the Iroquois League, the Seneca, claimed and occupied a number of towns in the Upper Allegheny.

Although the Iroquois maintained control of Western Pennsylvania, they permitted an active European trade network on the shores of the major rivers. The trade centers became an amalgamation of cultures and functioned not only as habitation sites but as focal points for trade, negotiation, and treaties. With the establishment of these semi-permanent trade settlements, native American lifeways were again subject to modification by European contact, a force which had already significantly influenced their culture.

The prosperity of the British traders and the speculation of the Ohio Company alarmed French officials who responded by dispatching Celeron to re-affirm French claims to the Upper Ohio Valley. As the French stationed troops at Presque Isle and prepared to occupy the Allegheny Valley, they reminded the Indian of their grievances against the English. Braddock's defeat saw the end of the casual trade alliance between the British and the Indians and British traders abandoned their posts.

The conclusion of the military occupation of Western Pennsylvania brought permanent agrarian settlers who soon produced surplus agricultural products. Inefficient year-round transportation to the east isolated the western territory and prompted an early growth of commerce. Colonial necessities of food, clothing, and shelter could soon be met by the region's trade system. Local production of textiles, hats, and caps; surplus agricultural products; and the production or iron, glass and wood supplied the essentials. With the arrival of skilled craftsmen, cottage industries gained importance and, by 1802, forty-six different master tradesmen were producing the marketing goods in Pittsburgh (Reiser 1951). Although most of Western Pennsylvania's needs could be met by regional commerce, trade with Europe and the east remained viable.

The expansion of commerce to the west occurred before the advent of the steamboat. Early trade was a circuitous venture involving several exchanges of goods. Businessmen purchased goods in Philadelphia, traded in Pittsburgh, and proceeded down the Ohio and Mississippi to the Gulf. The route was completed by water to its termination point back in Philadelphia (Reiser 1951). Early trade with the south and west brought no exchange of goods back to southeastern Pennsylvania. The construction of keelboats provided a return trip upriver and thus western products were introduced on the Pennsylvania market. Cotton, lead, furs, hemp and tobacco arrived from Kentucky (Cramer 1814). The invention of the steamboat provided an efficient two-way system with the west. With increased emigration, Pittsburgh focused its trade on the Ohio and Mississippi rather than Philadelphia. Imported products passed through Pittsburgh, destined for the west. The return trip to New Orleans brought sugar, coffee, cotton, wool, quicksilver, indigo, wood, and rum (Reiser 1951). By 1840, commercial products from Western Pennsylvania had traveled to Santa Fe and, in 1850, the west had become the principal outlet for local products.

Improved transportation also brought competition. The National Road which terminated in Wheeling increased trade to the south but was serious competition for Pittsburgh. Wheeling soon was in contention for the "gateway to the west." Serious commercial rivalry occurred in the north with construction of the Erie Canal, an event which nearly destroyed southwestern Pennsylvania's trade. When the Pennsylvania State System was completed in 1834, it provided a continuous waterway connecting the state, and Pittsburgh's commerical control was re-established.

Specialization, retail and wholesale outlets, and warehouses evolved in regional mercantilism by mid-century. Pittsburgh stores specialized in products such as mustard and spices, fruits and candies, millinery, and looking glasses (Reiser 1951).

The industrial revolution promoted commerce, which became second only to iron in the river trade. Rural commerce, characterized by the "general store" and small retail outlets, continues through the present. Villages associated with mining and other major industry were dependent on company stores for their needs.

5.5.5.1 Research Requirements

Establishing precise loci for early European trade and contact sites has been a major problem in Upper Ohio Valley Archaeology. Although the locations of contact Indian villages in Western Pennsylvania are known (D. Kent 1981), urban, agricultural and industrial impact coupled with indiscriminate "pot-hunting" have virtually destroyed the majority of these major river sites. Only 18 contact sites plus 12 reported, but not confirmed, sites are recorded in upper Ohio Valley records. This period of contact and early settlement encompasses complex cultural change in subsistence and tool technology, settlement pattern, and burial pattern. Reconstruction of the events, based on archaeological and ethnohistorical data, could provide a perspective and understanding of this significant cultural evolution.

The patterns of commercial evolution and fluctuation in trade as a result of military activity, access to goods from the west, and a decrease of trade with Europe have not been archaeologically defined. The comparison of goods available at company stores, ethnic neighborhood outlets, and urban commercial centers would provide insights into the understanding of immigrant populations. To date, only one commercial site is listed in the archaeological survey.

5.5.6 Transportation

European traders and settlers first entered the Upper Ohio Valley by way of three major river systems and Lake Erie which were integrated with a complex system of Indian paths. The trails are documented only for the contact and historic period although the abundance of archaeological sites associated with paths suggest ancient origins. Rivers as channels of communication and commerce are Western Pennsylvania's most significant transportation resource. Although the streams were not dependable for a full season's navigation, the Pennsylvania General Assembly approved funds in 1787 for the elimination of riffles, large rocks, and other natural obstructions (McCullough and Leuba 1973). Features such as fish traps and small private dams which impeded navigation were removed. Pittsburgh's river system became the "gateway to the west" providing avenues of transportation to the Mississippi, the Gulf and the Atlantic. With the purchase of the Erie Triangle in 1792 Western Pennsylvania boasted access by water to the Great Lakes and North Atlantic.

Before the Revolutionary War and the development of substantial road systems the Allegheny Mountains proved to be a formidable barrier to rapid expansion of European settlement. The Ohio Company constructed the first road in the west in 1752 as a commercial route between Cumberland and the Youghiogheny. A year later, the French built the Presque Isle Portage, the harbinger of other military roads strategically located or improved for war efforts. Until the construction of the Pennsylvania road which linked Pittsburgh and Philadelphia in 1793, the packhorse was the most important mode of transportation to western Pennsylvania. Roads were still little more than improved trails and were all too often poorly engineered. The trip from Philadelphia to Pittsburgh took a good team of six horses up to thirty-five days to transport 3,500 pounds of goods (Buck and Buck 1939).

As transportation technology developed, new transmontane routes, including the Pennsylvania Turnpike and the National Road, were completed. Six hexagonal tollhouses were constructed on the Pennsylvania segment of the National Road by 1820. Other tollhouse structures on the turnpikes and at ferries and bridges served as collection points. Increased mobility brought a surge of population-growth and a substantial network of transportation business. Taverns, villages, and hotels associated with the new road prospered, while others, marooned as old transportation routes were replaced, returned to domestic functions or were abandoned.

The instant success of the Erie Canal posed a significant threat to Pennsylvania's economy by the decline of trade networks with the eastern seaboard. Ohio also began the construction of a canal to connect with the Erie system which would provide a continuous route from the Atlantic to every point of the western rivers. Pennsylvania legislators were forced to initiate immediate feasibility studies for a competitive canal. The Act of February 26, 1826, authorized the construction of the Pennsylvania Main Line Canal. A 104-mile extension known as the Western Division of the Main Line ran from Johnstown to Pittsburgh and was begun in 1827. Stone masons, laborers, and carpenters were in demand to construct the canal prisms, lock-houses, slackwater dams, guard locks, and aqueducts. In terms of engineering skill, labor force, and sheer conquering of the elements, the Canal was a remarkable technological achievement for the time. The Pennsylvania System provided transportation via the Main Line from Philadelphia to Pittsburgh; the Erie Extension from above New Castle to Erie; and from the Allegheny River to the Franklin Line and the French Creek Feeder.

Promoters believed the canal would generate enough proceeds to educate every child in Pennsylvania. Unfortunately, the canal was plagued by inefficient management and severe financial difficulties resulted. Winter forced the canal to close for the season and flooding delayed the spring opening or interrupted service already in progress. The limitations of the canal proved significant and rendered it an undependable mode of transportation. Railroad feasibility studies for Pennsylvania were authorized by the General Assembly as early as 1839.

Abrupt socio-economic change resulted as the canal passed through a region. "Boom towns" centered around support industries for the canal and established communities prospered. In rural areas, the lockhouse became the focus of community life for nearby residents.

The completion of the lock and dam system in 1846 was also essential to industrial development in the Upper Ohio Valley. Privately owned tollbridges, covered bridges, and publicly operated bridges spanned the waterways. Many of Western Pennsylvania's bridges were technologically and architecturally significant.

As the Pennsylvania Canal deteriorated, the rapid, efficient rail system was implemented. The key for opening domestic and foreign markets to the area's rich natural resources of lumber, limestone, oil, gas, and coal was the development of the railroad. Initially, the railroads were horse-drawn tramways and short-run systems associated with industry. Later, the opening of the Pennsylvania Railroad in 1852-54 insured the economic vitality and industrial expansion of Western Pennsylvania. Every major industry proclaimed the rail system as the hallmark of expansion. Massive stone bridges, and tunnels were an integral part of the system. Railroad stations and junctions, some of classic architectural style, not only functioned as transportation features, but drew increased population as well. With railroading came the commuter age and urban dwellers relocated to suburbs economically connected by the commuter train and eventually by the electric interurban system.

5.5.6.1 Research Requirements

The rapid evolution of transportation during the 19th century produced a complicated stratigraphy of cultural and technological processes. As a series of villages, taverns, hotels and industries associated with transportation was bypassed for a new system, immediate socio-economic changes occurred. Accurate recording and plotting of transportation routes and features is essential to the understanding of regional historical archaeology. Early stone bridges, tunnels, tollhouses, milestone markers, and scars of roads, canals, paths, and railroads are important resources. The recording and recovery of sunken vessels in Lake Erie and in the major rivers can provide information for both transportation and commercial problems in local archaeology. The National Register and Pennsylvania Inventory already provide protection for a number of important sites associated with early transportation.

5.5.7 Agriculture

Colonial agriculturalists, attracted to southwestern Pennsylvania by abundant and inexpensive lands established an economy base on self-sufficient agriculture by the last quarter of the eighteenth century. Many of the first settlers were indentured servants whose terms were up after the eastern land resources were depleted. Religious dissent brought others to settle in the west. By 1790, 95% of the 75,000 persons living in western Pennsylvania were farmers (Fletcher 1950).

As farmers established their claims and constructed their farmsteads, many became prosperous, and surplus agricultural products were a major economic force in the early settlement period. Some colonists were attracted to the west to exploit the continued demand for pelts. However, between 1803 and 1843, bounty was paid for the pelts of the most dangerous and destructive mammals (Webb 1943). John Roebling (1935) of Butler County reported that by 1832 wolves and bear were rarely seen "nor other wild beasts." By the late nineteenth century, the success of these hunting and bounty forays brought the extinction of many species.

For a century, Pennsylvania's tremendous production of wheat afforded it the title of "the bread basket of America" (Fletcher 1950). Fertile soils produced abundant crops of wheat, corn, rye, fibers, potatoes and tobacco. Where soils were eroded and lands unsuitable for agriculture, livestock raising was important.

While the expansionist period brought commercial and industrial growth to the southwest by 1820, settlers still maintained a living through self-sufficient agriculture and its associated industries. Only 7% of the population at that time lived in an settlement (Fletcher 1950). Rugged lands and inadequate transportation in the north detained population growth for many years.

As early agriculturalists depleted the soil of its natural fertility, old fields lost their value and new fields were cleared. Sufficient labor was not available for proper soil management on larger farms. Therefore, potentially good farm lands were reduced in production. In 1832, a Butler farmer (Roebling 1935) reported that many of his neighbors worked their farms for 20 or 30 years without fertilizing. When lands to the west were opened for purchase in 1840, many exhausted farms were sold or abandoned.

The sense of individuality, characteristic of early nineteenth century American was expressed by the famsteads. Planned for efficiency, the 19th century farm functioned with an original cluster of outbuildings and domestic structures. Early dwelling houses in typically Western Pennsylvania vernacular style were characterized by a five-bay, stone or frame form with a central door and hall. A variation of this form was the three-bay residence with hall and door to one side (Stotz 1966). The original log cabin, constructed when the land was first claimed, was often utilized as a barn, shed, or summer kitchen. Throughout the 19th century, building techniques reflected current architectural styles through a confined decorative expression limited most often to entranceways, roof supports, or window motifs.

The 19th century barn, often very elaborate in size and decoration, can represent an important cultural resource. Original log and/or stone barns utilized the bank barn form because it afforded a lower entrance for animals and a wagon entrance of the upper level (Stotz 1966). Nationality played an important role in the style of Pennsylvania barns. The Scotch-Irish barn with its characteristic simple lines, unpainted perpendicular siding with no overhang and little or no ornamentation, was common. The Pennsylvania German barn known for its classic expansive size and ornamentation, had horizontal, painted siding with ends of brick or stone and a narrow overhang. Often a life's savings was invested in the completion of a classic German Barn (Fletcher 1955).

Domestic and farm outbuildings are important to the integrity of the farmstead and may have a singular function or style important to the interpretation of nineteenth-century lifeways. Lofts and attics were utilized for the smoking of meat in the early log house until the construction of a smokehouse as an integral part of the farmstead. Smokehouses were usually brick or stone structures enclosing an ash bin and fire pit and sometimes had an accompanying chimney (Sloane 1955). The springhouse, usually constructed of stone, consisted of two levels, one for the water supply with tubs and trough, and another for storage or living space (Stotz 1968). A copper whiskey still was often housed in this upper level.

Detached summer houses or kitchens were constructed of frame, stone or brick and often in imaginative style. Large arched, brick, bakeovens were important domestic features as were the woodshed, icehouse, and privy. Milk houses, animal pens and wagon sheds were associated with farming activities (Long 1976). The wooden, stone or brick upright silo was not important until very late in the 19th century. The forerunner of the silo was a ditch which was excavated, lined with stone and overlaid by a bed of clay or ashes.

Family cemeteries associated with the farmstead represent important cultural resources which may contain genealogical information, decorative iron work or evidence of stylistic change through time.

As specialized and mechanized framing developed, the configuration of the farmstead changed. The labor of men and horses was replaced with machines and farm production rose dramatically. Between 1840 and 1900, the number of Pennsylvania farms doubled and, in the peak year of 1900, 224,248 Pennsylvania farms occupied 19 million acres of land (Fletcher 1955). After 1900, economic opportunity in urban areas and the availability of inexpensive lands in the west were major factors for the emigration of farmers. By 1920, Armstrong, Butler, Indiana and Jefferson counties each had over 130 abandoned farmsteads (Fletcher 1955).

5.5.8 Industry

The two goals of industrial archaeology as defined by Buchanan (1978) are (1) the desire to preserve a representative selection of industrial artifacts as a significant aspect of cultural heritage and (2) the historical incentive to preserve as much physical information as possible of the industrial past. Western Pennsylvania, as a pioneer in industry and technology, has a significant cultural heritage related to industrial resources. Not only does the region contain a plethora of industrial sites but it also affords the archaeologist a wealth of data relating to the socio-economic climate and cultural evolution of the immigrant and laborer. The common man of Enlightenment America, an educated mechanic and property owner clothed in equality, differed vastly from the "industrial slaves" in the latter half of the nineteenth century. The decline in individuality and living conditions for the common man is understood from the historical record but has not been archaeologically researched.

Early industry in Western Pennsylvania developed out of isolation and tended to be domestic in character. Grist mills, saw mills, and distilleries associated with agriculture were first important, The War of 1812 stimulated industry in southwestern Pennsylvania notably by the manufacture of artillery , liquor, and tobacco as well as surplus agricultural products. The post-war depression caused a short-term decline in industrial advancement but improved transportation and mechanization promoted industrial development. The incentive for land ownership and "getting ahead" characterized the Industrial Revolution. Shipping magnates, rich immigrants, and businessmen occupied the upper echelon of the social system. As Americans strived for national culture, European ties were weakened. Large, multistoried industrial structures and smoking chimneys dominated the landscape as Western Pennsylvania experienced the full impact of industy.

5.5.8.1 Iron and Steel

The production of iron began in the United States in 1620 but it was not until the late 18th century that the first iron furnace went into blast in Western Pennsylvania. By 1814, the iron industry was "all the rage" and speculators predicted that every sufficient stream in the region would soon have an iron furnace (Stotz 1966).

The iron industry was first important to the rural farmer who either leased his wood lots for charcoal making or initiated a charcoal business. The early furnaces, dependant upon natural resources of water, timber, limestone, and iron ore, were located in rural areas where self-supporting communities were developed. Ironmasters lived in substantial structures, often mansions of contemporary architectural style (Stotz 1966), while workers were housed in one or two-room log and stone cabins. Fifteen to twenty men were required for the operation of a furnace and another 40 to 50 persons pursued supportative occupations as lumberers, agriculturalists, miners, and teamsters. Because of the rural, isolated environment of most iron communities, the population was self-supporting except for the importation of liquor (Sharp and Thomas 1965). Fletcher (1955) likens the iron communities to the great plantations of the south.

As technology advanced, coke and steam power proved more efficient than water power and the industry expanded. However, transportation remained an obstacle for growth until the advent of the Pennsylvania Canal which partially alleviated the problem. The small-gauge railroad employed by the Great Western Furnaces at Brady's Bend was the forerunner of the railroad era, a time of significant development in the iron and steel industry. With railroads providing a fast, efficient method of raw material transportation, the rural iron furnace communities were abandoned and companies located their operations in more populous regions. The availability of raw materials including a variety of iron ores, hematite, magnetite, and carbonate, made Pennsylvania the center for iron and steel production in America.

By 1850, Pittsburgh had become the "Iron City" and it's 13 rolling mills and 30 foundries produced iron products from steam engines to tacks (Reiser 1951). The iron industry thrived during the Civil War, contributing to the war effort by the production of artillery and iron clad boats.

After the introduction of the Bessemer process in 1874, Andrew Carnegie incorporated the Carnegie Steel Company which soon became the largest in the world employing 30,000 workers by 1892 (Lorant 1966). Carnegie and Frick agents in Slovakia, Poland, and Hungary directed thousands of unskilled laborers to the region to fill the tremendous need for workers. Pittsburgh's population doubled from 1860 to 1900. Unrestricted immigration and the immediate need for hundreds of unskilled workers were factors in the evolution of Pittsburgh as the melting pot of the nation. Language barriers and discrimination tended to draw ethnic groups together and many of the new laborers and their families clung to old traditions. Slavs, Poles, and Czechs replaced British and northern Europeans as the unskilled labor force of industrialized Western Pennsylvania while the latter rose to skilled or white collar positions.

The Homestead Plant of the Carnegie Steel Company is representative of the ethnic climate of the time. In 1970, 53.2% of the employees were Slav, 28.4% were "native white", and 1.8% were "colored." The community was divided between English-speaking, Slavs, and Negroes; although blacks were connected to the first group by language. Linquistic and cultural barriers led to a total separation of community (Byington 1910). Western Pennsylvania's ethnically distinct towns and neighborhoods continue to express the region's diverse cultural heritage.

5.5.8.2 Glass

As the need for window glass and bottles was realized, local Western Pennsylvania businessmen initiated competition for a market once dominated by European and eastern producers. In 1796, both John O'Hara of Pittsburgh and Albert Gallatin of New Geneva hired German glassmakers and established glass manufacturing plants. Skilled workers from Europe dominated glass manufacturing. Benjamin Bakewell began the first successful flint glass works in America and later pioneered in the production of pressed glass. By 1814, Cramer (1814) reports that most apothecaries sold only glass manufactured at "home". Although limited access to necessary raw materials was confining in the early years of glass production, improved transportation brought necessities to the doors of the glass houses.

By 1831, 20 glass houses were in operation in western Pennsylvania and, by 1870, 50% of American glass was produced in 68 local factories (Lorant 1966). The consolidation of local glass factories was initiated by PPG and United States Glass during the last quarter of the 19th century. With increased technology and demand, western Pennsylvania glass production grew to have with a world-wide market.

5.5.8.3 Textiles and Leather

Both the textile and leather industries were significant in early Pennsylvania industry. Cotton became an important southern import and the manufacture of cotton fabrics thrived. Steam power increased production and expanding western settlement provided markets for both woolen and cotton textiles. Five large cotton factories and many smaller ones generated $1,500,000 of business in Pittsburgh alone (Reiser 1951).

The abundance of hemlock bark from the northwest and the increased demand for harnesses, saddles, etc. brought about the commercial production of leather goods. By 1810, leather processing was second only to iron in Pittsburgh production. Growth continued through the 1870's when 20 tanneries were in operation in Pittsburgh and many others throughout western Pennsylvania. The industry declined in the late 19th century.

5.5.8.4 Boat Building

Boat building "sheds" were located as early as 1788 on the Monongahela River at Elizabeth (Harpster 1938). The industry progressed and boats were produced in riverine communities throughout southwestern Pennsylvania. Keelboats, barges, flatboats, and ocean-faring vessels became essential to the development of the western commerce and, in 1808, ship building peaked as Pittsburgh's third leading industry (Cramer 1814). The following year marked the beginning of steamboat production in Pittsburgh with the launching of the New Orleans, the first steamboat on western waters.

The production of boats at Erie, one of the finest harbors on the Great Lakes and Pennsylvania's only lake port, played a critical role in the War of 1812. Oliver Perry's fleet was assembled at Erie and was later responsible for the defeat of the British, ultimately giving the U.S. control of the Great Lakes. The first iron-hulled warship of the U.S. Navy was assembled at Erie.

The need for transporting lumber and salt brought boat building into importance along the Allegheny. Although productivity was increased by the Civil War, the industry ceased to be a major factor in Pittsburgh economy by the late 19th century.

5.5.8.5 Potteries

Pottery production in Western Pennsylvania began at least as early as 1786 when Cribbs and Arner were listed as potters in Hempfield Township (Fields n.d.). European and eastern ceramics were widely imported but a growing number of local potters throughout western Pennsylvania began to meet some of the domestic and commercial needs.

In southwestern Pennsylvania, a source of blue or gray clay suitable for the manufacture of stoneware stimulated 19th century production of ceramics from 1950 to World War I. At least 15 potteries produced stoneware within a 32-mile radius of the clay source. Smaller potteries consolidated in 1880 a few years after the industry had "peaked" (Michael 1977).

5.5.8.6 Petroleum

Western Pennsylvania lies within the Appalachian oil and gas region which extends across the Allegheny Plateau for the distance of 500 miles (Richardson 1932). Native Americans and early colonists were cognizant of oil resources but recognized petroleum only for its medicinal or lubricative value. The drilling of the first successful oil well by Drake in Venango County produced an immediate impact on the Northwest, Skyrocketing land values and economic expansion brought overnight prosperity to the region. "Boom towns" grew within weeks as companies quickly constructed the necessary support structures for potential employees. Homogenous frame houses surrounded by derricks composed the typical oil town (Giddens 1948). The cluster of company houses and stores attracted other small businesses and, as populations multiplied, grist and saw mills, blacksmith shops, and taverns and hotels were built.

Transportation became an important factor in the increase of petroleum production. The inefficient system of wagons and boats depressed oil production until the advent of the railroad and pipelines. Installation of the pipelines was delayed by teamsters who realized their jobs would be obsolete when the pipeline system was completed. The "free pipe bill" was finally passed in 1868 and restrictions for pipelines were removed (Beers 1915). Associated industries such as oil refining and barrel production supported the oil business in Western Pennsylvania. Oil and gas wells throughout the region continue to produce fuel for domestic and industrial use.

5.5.8.7 Lumber

The need for shelter on the frontier stimulated the production of lumber and shingles thus the sawmill became as important as the gristmill in early industry. Lumbering began as a commercial enterprise in the northwest when Cornplanter erected a sawmill on the Allegheny River and floated lumber to the Pittsburgh market in 1795. By 1812, 7,000,000 square feet of Allegheny lumber had been purchased and a business which would result in the devastation of the region's virgin forests, was well established. Over 50 billion board feet of white pine and hemlock were cut in western and central Pennsylvania (Fletcher 1955).

The industry began with the horse or oxen team and wagon as transportation for accessible trees to be floated down river. With the advent of the logging railroads and technological advances in sawmill mechanics, the industry inflated. The Wheeler and Dusenberry Lumber Company in Forest and Warren counties, for example, consisted of 3 mills, 4 farms, several lumber camps, and over 50 miles of railroads (Kiffer 1983). Riverside hotels along the Allegheny and its tributaries catered to the lumberers. The transient nature of the lumbering industry resulted in only temporary prosperity for the associated villages and towns. Consequently, ghost towns, abandoned farms, and defunt sawmills and railroads rights-of-way represent the extant remains of one of the most significant industries of the northwestern Pennsylvania.

5.5.8.8 Research Requirements

A total of 83 industrial sites are included in the present archaeological site inventory (Table 2). The current recordings fall far short of the archaeological potential of the western Pennsylvania area. Study of land use patterns and changes over time could be initiated as could investigations of technological changes at mill, furnace and pottery locations. It is recommended that some effort be made to document and locate the fast disappearing traces of complexes which developed as part of the commercial, industrial and transportation history of the region.

The collection and preservation of primary research data including industrial records, logbooks, blueprints, photographs, etc., and the preparation of an inventory of such record would assist in preserving these historic cultural resources.

Some attention should be given to preparing detailed, block-by-block historic period plots of archaeological potential in congested urban areas. This information is particularly needed in downtown Pittsburgh, Old Birmingham and Old Allegheny where constant rebuilding is destroying 18th and 19th century resources. Once this information is collected in one report, it would be available for determing resource management decisions without additional and needless duplication of archival research.

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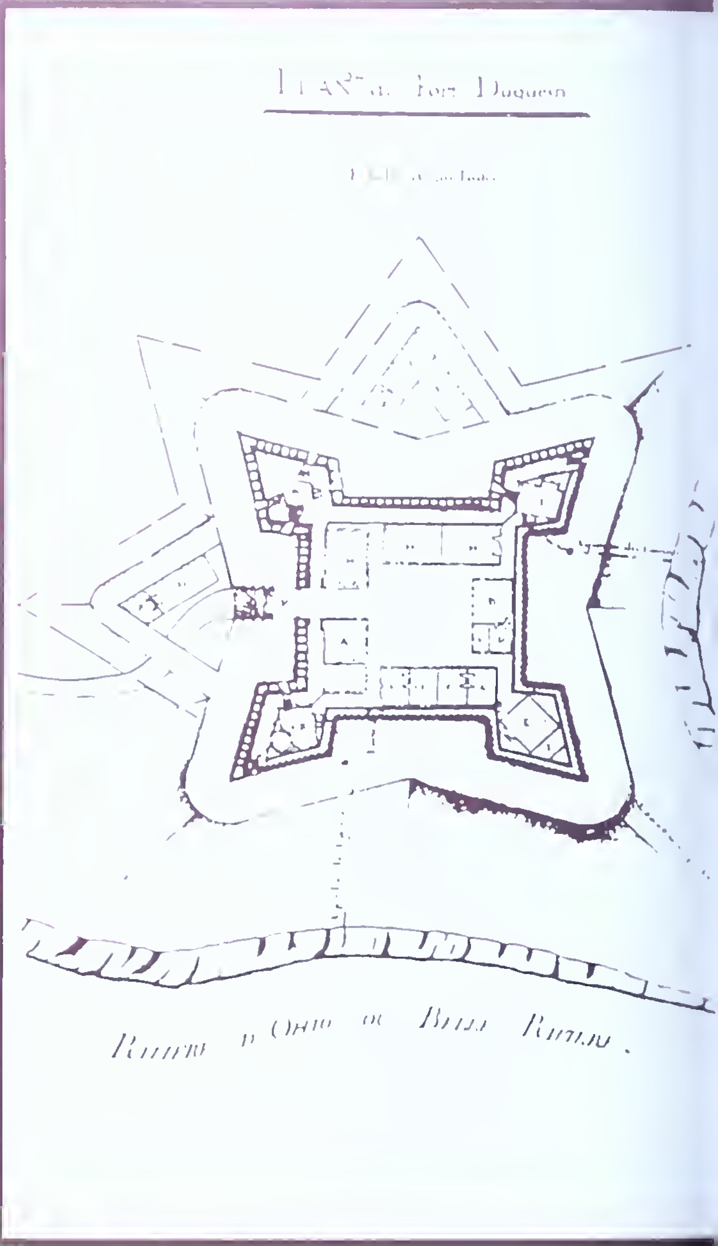
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